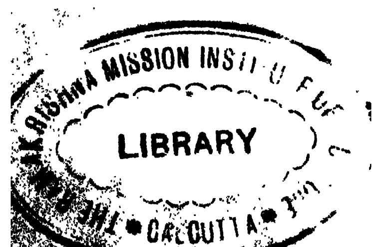


INDIA

IN

1930-31

A statement prepared for presentation to Parliament in accordance with the requirements of the 26th Section of the Government of India Act (5 & 6 Geo. V, Chap. 61).



CALCUTTA: GOVERNMENT OF INDIA
CENTRAL PUBLICATION BRANCH
1932

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Presented by d/o justice C. C. Biswas.

PREFATORY NOTE.

The task of preparing this report for presentation to Parliament has been entrusted by the Government of India to officers of the Bureau of Public Information under the control of the Director of Public Information, and it is now presented under the authority and with the general approval of the Secretary of State for India; but it must not be understood that the approval either of the Secretary of State or of the Government of India extends to every particular expression of opinion.

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INDIA IN 1930-31

CHAPTER I.

External Relations.

Political happenings in India during the year 1930-31 having been so exceptionally important, it might be expected that such description of them as is permissible in a publication of this kind would be found in its opening Chapter. But a more indirect method of approach seems preferable; for by describing, first, some of the major problems which have arisen out of India's increasing contacts with the rest of the world, we shall enable those readers who are comparatively unfamiliar with the affairs of this country to see the events of the year in better perspective. The plan of this Chapter, therefore, will be as follows: we shall endeavour, at the outset, to trace the growth of the demand now put forward by the majority of educated Indians, that the responsibility for ruling this country should be transferred from British hands to their own; and since the existing system of Government could only have been established owing to the inability, or lack of desire, on the part of Indians to undertake the administration of the sub-continent during the last two centuries, we shall then proceed to consider how far they would be capable, unaided, of resisting external interference in their own domestic affairs at present,—indicating first the geographical factors upon which the defence of India depends, secondly the nature of the military forces she now maintains within her borders, and thirdly the problems that have arisen owing to the desire of the nationalists that these forces should be subject to their own control; in conclusion, having discussed the question of defence in its three aspects, we shall devote some pages to describing the status and circumstances of Indians who have taken up their residence overseas.

From the time when British Supremacy first began to be established until well on in the XIX century, India was scarcely aware of having any relations at all with the rest of the world, and remained a profoundly isolated political and cultural unit.

Actually of course her welfare was as intimately bound up with the external affairs of Great Britain then as it is now,—perhaps more so,—but her people had no means of bringing influence to bear on British Imperial and Foreign policy, and consequently felt little or no interest in it. It was only very gradually,—and by the operation of a large number of different circumstances,—that a change set in, which has resulted during the last half century in such a widening of Indian interests that there are now few parts of the world in which she is not aware of having some concern. The factors which have been responsible for this remarkable transformation are both "moral" and "material". On the one hand there has been the extension of educational facilities, the urge towards democratic institutions, and the whole *congeries* of cultural tendencies which have arisen out of the impact of "progressive" Western ideas upon a complex but static and traditional Eastern civilization. On the other hand we have the direct and fundamentally important consequences of the revolution in the means of transport and communications, which by breaking down the barriers of time and space have brought all the peoples of the world into closer contact and, so far as India is concerned, have encouraged a habit of travel amongst the propertied classes, stimulated emigration, and caused an immense increase in the value of her overseas trade. In consequence there has lately been a very rapid and remarkable improvement in her international and inter-Imperial status; for the last decade or so this has been exemplified by such facts as her membership of the League of Nations, her representation at the Imperial Conferences, and by the creation of the office of the High Commissioner for India in London and of agencies in various parts of the world for safeguarding the interests of emigrant Indians or fostering Indian commerce; and it was still further emphasized during the period under review by the fact that, for the first time in history, a large gathering of representative Indians was convened in London to discuss the future constitution of their country in free and open conference with members of His Majesty's Government.

When one bears in mind the immensity and variety of India, her extraordinary physiographical, racial, linguistic, and cultural multiformities, the size of her population, the profound ignorance and poverty in which the vast majority of her inhabitants exist, and the antiquity and conservatism of her elaborate civilization,

one cannot fail to be impressed by the speed with which these changes have occurred, and by the genuineness and intensity of the desire, on the part at least of most members of the educated classes, to demonstrate that their country is now, in all essentials, united, and fit to take her place on equal terms amongst the self-governing nations of the world; and although we cannot pretend, within the limitations of a work such as this, to undertake a detailed historical analysis of the Indian nationalist movement, it is at least essential,—if the significance of the political and social ferment in which the country is at present involved is not to escape us,—that we should endeavour to indicate some of its more outstanding causes and characteristics. At the outset we must make the preliminary, and it might seem paradoxical observation, that had British rule been inefficient, unprogressive, or malevolent, the present movement against it could hardly as yet have arisen; for if the varied tracts of territory known as British India had not been subjected to the co-ordinating influence of a capable administration, and the disintegrative effects of their geographical immensity mitigated by the introduction of the latest means of communication, and their diverse peoples enabled by the Occidental culture acquired by a minority amongst them to discover common aspirations, the nationalist movement would have been so seriously thwarted that it is difficult to see how it could, by 1931, have developed to anything like its present strength. Thus the material achievements of the British *Raj* have themselves created the conditions whereby many Indians hope it will be possible to supersede it altogether, and it at any rate seems probable that, as a direct consequence of the measure of mechanical, cultural, and linguistic unification which India has acquired under the existing system of Government, the process of relinquishing the practical monopoly of power which the British maintained in this country for a century and a half, which has already advanced very far, will soon be completed.

Within the growing stream of anti-British, or perhaps it would be more correct to say anti-Western, sentiment, whose uprising first became conspicuous during the last three decades of the XIX century, it is possible for the historian to discern two distinct currents, which have commingled and influenced each other to a considerable extent, but nevertheless retained their individuality. The one was primarily a reformist movement

within the Hindu community,* initiated by such religious leaders as Dayananda,—the founder of the Arya Samaj,—Vivekananda, and Tilak, and based on the belief that the best features of Hindu, —or Indian,—culture were imperilled by contact with the alien and materialistic civilization of the West, and that only by the rejection or exclusion of everything connected with it could the salvation of the country be achieved. It was this movement which evoked the cry of "Back to the Vedas" which is still raised by one school of nationalist opinion. The other movement, however, derived its inspiration less from the past than the future, and arose from the more materialistic desire of those Indians,—yearly increasing in number,—who had acquired a Western education and Western ideals, that the few thousands of aliens who migrate to India, for but a portion of their lives only, from a small island 6,000 miles away, in order to direct the destinies of over 300 millions of people, should be deprived of their monopoly of power, and that control over the country's affairs should be transferred to Indian hands. At the time when ideas of this latter nature first began to obtain some currency the obstacles with which they were confronted were immense, not the least of them being the unrivalled material, intellectual, and moral supremacy which was then held amongst the peoples of the world by the nations of Europe,—and particularly by Great Britain. But during the first three decades of the XX century a variety of factors conspired to reduce the prestige of the West substantially. As far back as 1895 the rout of an Italian army in Abyssinia had provided the world with a spectacular demonstration of the fact that Europeans were not necessarily invincible by "coloured" troops, and at the opening of the new century Indians were puzzled to observe that it was necessary for the mighty British Empire to exert, apparently, its whole strength for two and a half years before it managed to subdue two small republics of sparse population and meagre resources in South Africa. Even more significant were the events of 1904-05, when India watched with astonishment the victory of an Oriental nation over the European Power which Great Britain had for the previous half century considered to be her most formidable rival in the East. The immense moral effect which the outcome of the Russo-

* 'Reformist' in the same sense as was the Reformation in Europe, which was inspired perhaps less by a desire for innovation than by the wish to restore the old truths in their original simplicity.

Japanese War had upon the peoples of Asia was at the time insufficiently appreciated in England, where rivalry with Russia had become traditional and the recently concluded Anglo-Japanese Alliance had proved distinctly popular; but the influence exerted by this occurrence upon the development of the Indian nationalist movement was very great, since it gave a strong impetus to the already growing disposition of the educated classes to exalt the achievements of Asiatic peoples in past ages and to assert the superiority of the culture of India over that of Europe. Moreover at about this time the growing industrialization of India, and the dissemination throughout the whole world of mechanical inventions which had originally been largely confined to the countries of the West, brought about a gradual decline in the prestige that races of European origin had acquired from the control which scientific discovery had gained for them over the forces of nature; for on the one hand it began to be realized that the achievements of Europeans in this direction were possibly the result merely of a series of historical accidents rather than of any inherent superiority on their part, and that, in any case, where they had opened the way others might now follow, with equal or perhaps greater success; on the other hand, as the processes and methods of the new industrial civilization were brought more closely before the view of those who were unaccustomed to them, their defects as well as their advantages became increasingly apparent to the intelligent observer. Thus, by the beginning of this century, the mechanical innovations which had been introduced into India by the British, and which at first seemed so miraculous, had begun to lose their impressiveness.

But important though all these factors were, the catastrophe of 1914-18, and the variety of new ideas to which it gave rise, was even more so. The fact that Great Britain emerged victorious from the ordeal was not neglected, but Indian nationalists were quick to observe that her whole social and economic structure seemed to have been shaken to its foundations by it; and the inability of the peoples of Europe as a whole, who for the previous century at least had been the intellectual leaders of the world, to settle their differences except by a conflict involving the slaughter of millions of their best men and the crippling of their resources for a generation, did not tend to stem the tide of disillusion concerning the whole of Western civilization which was already flowing

strongly. Equally striking in its effects upon the educated classes was the declaration by the Allied Powers of the objects for which they were contending, and the fact that India herself had played an important part in the struggle. The popular acceptance in Europe of the doctrines of self-determination, and of the inherent rights of weak nations to control their own destinies, was eagerly reciprocated in India by those who considered that the existing system of administration branded them with the stigma of inferiority, both at home and abroad, and debarred them from assuming the degree of responsibility for the administration of the affairs of their own compatriots to which their abilities should have entitled them; and these reflections were further stimulated by the official declaration in August 1917 that British policy in India would thenceforward be based on the principle of the "progressive realization of responsible self-government," and "the increasing association of Indians in all branches of the administration." The Government of India Act of 1919, which was the outcome of that declaration, might have gone far, then, towards satisfying Indian nationalist demands, had not its working been prejudiced at the outset by the widespread indignation aroused by the shooting in the Jallianwala Bagh at Amritsar, and by the non-co-operation movement during the three subsequent years for which this incident was to a large degree responsible. Between 1923 and 1927, spectacular manifestations of Indian nationalism were comparatively infrequent, but the self-confidence of the intelligentsia had been considerably increased by the demonstrations during the four post-war years of the extent to which they were capable of enlisting the sympathy and support of the uneducated masses; and the fact that the Statutory Commission, which was appointed in the latter year to report upon the working of the Act of 1919, contained no Indian members, caused a renewal of the agitation, which may be said to have gradually increased in strength and volume from then onward until it culminated in the very serious events which characterized the period now under review. Unquestionably, nationalist sentiment has now spread far and deep throughout the whole structure of Indian society, and is capable of stimulating an enthusiasm which cannot but evoke respect. Its outstanding characteristics may be said to consist in a passionate desire that Indians may be enabled to control their own destinies and obtain complete equality of status with representatives

of other nations and races both at home and abroad, and in an impatience of every obstacle that may be encountered in the attainment of that goal. Impatience indeed constitutes both the chief emotional impulse and the chief danger of the movement; for the military and strategic problems to which we shall have to devote our attention in a moment, and the social problems which will be discussed at the beginning of Chapter III, are realities which cannot be ignored with impunity, and were the cruder nationalist demands to be too promptly acceded to, and the collective enthusiasm for the ideal to disintegrate in the face of the actual in the way which the history of other peoples shows it is apt to do, there would be grave likelihood that the country would revert to the state of strife and internal disorder to which its magnitude and diversity has always rendered it liable.

For a land which possesses land frontiers stretching over so enormous a distance as 6,000 miles, India is on the whole fairly well sheltered from external foes. No serious danger has arisen for years at any part of the long section of her boundaries that runs Northwards and Westwards from the Burmese coast to the gorge of the Indus. The barrier of the Himalayas provides ample safeguard against invasion from the direction of Tibet; indeed it is only by the Chumbi Valley route that communications across this section of the frontier are at all practicable. Moreover the population of Tibet is sparse, and representatives of the Tibetan Government appear to value the goodwill of India as a factor likely to be of service to them in the preservation of their country's jealously guarded inaccessibility. The only other State apart from a portion of China* with which India's Northern frontiers are in contact is Nepal, and for more than a century the relations between the two countries have been extremely cordial, for reasons which seem likely to be permanent, since they are based alike on grounds of sentiment and mutual self-interest.

In the North Eastern corner of the Indian frontiers there are some practicable passes leading into the Province of Assam, though they are scarcely open and easy enough to afford the means of serious invasion. The border of Burma, however, marches for approximately 1,000 miles with that of China, and is not devoid of routes fit for considerable bodies of civilized troops. From time to time the peace of this section of the frontier has been threatened;

* Chinese Turkestan.

for the lawlessness in Yunnan has increased during the present unsettled conditions of the Chinese Republic, and while this state of affairs continues minor incursions into Burmese territory are always possible. Nor must we forget that at present China contains large numbers of armed soldiers; they are, it is true, as a rule divided both geographically and in political allegiance, but the fact of their existence cannot be ignored. Further South, Burma marches for some 100 miles with Laos, a province of French Indo-China, and then for over 600 miles with Siam; but communications between Burma and these two countries are scarcely better than those between Burma and Yunnan, and the chance of serious trouble arising on their frontiers is in any case small, since their relations with Britain are excellent. At the same time, it is advisable to note that neither Indo-China nor Siam is by any means militarily impotent, since each maintains a considerable army and also an air-force.

It would therefore be a mistake to treat the chances of invasion from the North and East as non-existent. It is however to the North-West that the eyes of those responsible for the defence of the country usually turn. But before we embark upon our description of the very complex problems to which this territory gives rise, it is desirable to draw attention to one other danger to which India is exposed, which is liable to be overlooked. This is the possibility of attack from the sea. The fact that since the establishment of British rule India has been able to rely for the protection of her coasts upon what, throughout almost the whole period, has been the mightiest navy in the world, obscures the fact that she is now peculiarly vulnerable from this direction. Her sea-borne trade is rich, and a very large proportion of her wealth is collected into centres within easy distance of the coast; moreover the few good harbours she possesses are from the naval point of view not easily defensible. It is therefore no exaggeration to say that adequate naval protection is essential to her existence. In the last war, the exploits of the "Emden" brought terror to large sections of the population of the coastal towns, and caused serious disorganization of trade in places far beyond the reach of the comparatively insignificant vessel to which it was due,—thus amply demonstrating how easy and damaging even an isolated attack from the sea may prove. Moreover it should be noted that it took place at a time when the British fleet was at its maximum

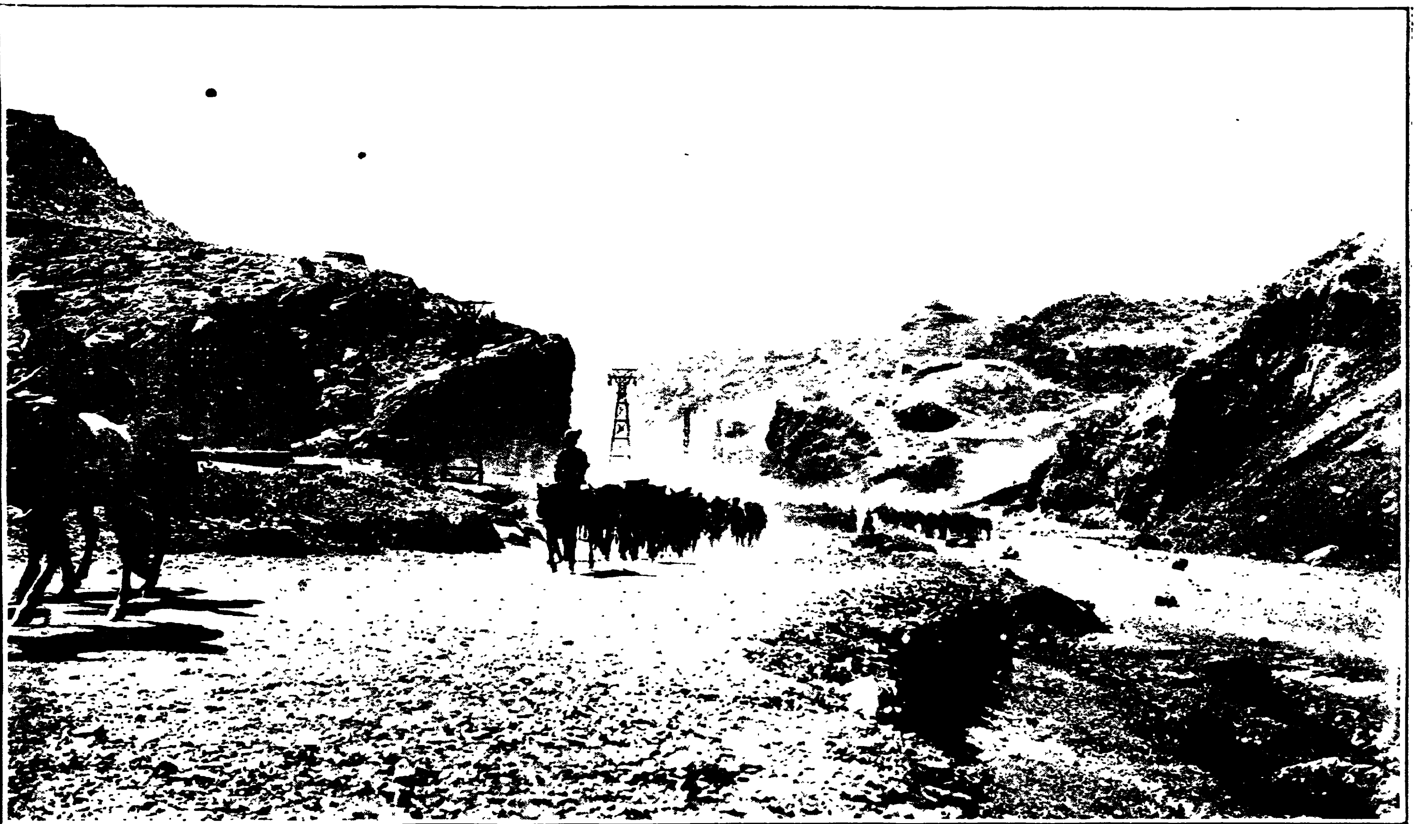
strength, and when even a solitary raider could not long escape its all-embracing grip. So long as India's connection with Great Britain persists and the naval power of the Empire remains adequate for the discharge of its responsibilities, it is safe to say that she need scarcely consider an invasion from the sea or any major naval action near her coasts to be at all likely, though minor raids upon her shores and upon her sea-borne traffic may be expected. But should she ever lose her connection with the British Empire and be thrown on her own resources, her predicament in the face of the attacks by first-class Naval Powers which her wealth and importance might provoke can easily be imagined.

We must now return to consider the problem of defending the North-West Frontier. Here lie the gates through which invading peoples have throughout history penetrated again and again into India's very heart. The freedom from invasion which has followed the establishment of the British *Raj*, has tended to obliterate the memory of those long centuries during which the country was never free from the danger of sudden irruption and despoilment by the hordes of Central Asia. Nevertheless, even among the educated classes, with their Western ideals and progressive outlook, the latent menace from the North-West is not overlooked; and in countless villages throughout the land the dread which these marauders inspired is still vividly recalled. Moreover the fact that the inhabitants of the lands which lie beyond India's North-West Frontier are mostly of the Muslim faith exercises a considerable influence upon the currents of Indian politics. At present, the gates of the North-West, guarded as they are by a powerful army trained and organized in accordance with British traditions and experience, seem securely locked against the possibility of violation. But the gates themselves remain,—a fact of which the country received a sharp reminder during the year under review; and to keep them closed against foreign invaders is a task which will always be one of the primary obligations of any Government which rules India.

The problems of the North-West Frontier may broadly speaking be said to be of two kinds, the international and the tribal. The international problems arise from the relations between the Government of India and the three foreign powers, Persia, Afghanistan and Russia, which in addition to Great Britain are in varying degrees interested in this corner of the world. Fortunately rela-

tions with Persia remain satisfactory. The inhabitants of Afghanistan, however,—although she is not a densely populated country and her resources are undeveloped,—are belligerent, restive and physically formidable, and large sections of them have from time to time rendered but nominal allegiance to their ruler and in fact conducted themselves as independent units in hostility to India. Moreover as recently as 1919-20 the Government of India was engaged in a war with the Kingdom as a whole. A state of confusion prevailed throughout the country during most of 1929 as a result of the abdication of King Amanullah, and the usurpation of Bacha-i-Saqao. The British Government withdrew their representative from Kabul during the usurpation and maintained steady neutrality throughout the Civil War. During the subsequent year ordered Government was gradually restored under King Muhammad Nadir Shah, and there seems genuine reason now for believing that Indo-Afghan relations have been satisfactorily re-established. The interest of Russia in the North-West Frontier is naturally more indirect than that of Persia and Afghanistan, since at no point are her own borders in contact with it; and were it not for her magnitude, strength, and international importance, there would be no reason for considering her in connection with Indian frontier problems at all. But while she was under the Czarist system of Government, her acquisitive designs in Central Asia, and her relations with Afghanistan, and even Persia, aroused a good deal of alarm amongst those responsible for the administration of the Indian Empire; and although the establishment of the Bolshevik *régime* in 1917 deprived her of some territory, more prestige, and almost all her international connections, the fact that her new system of Government is out of harmony with that of the rest of the world, and that one of its distinctive features has been intensive anti-British propaganda, has not made for easy relations with India and indeed has led on occasions to vigorous diplomatic protests. But the recent resumption of Anglo-Russian relations has brought about some relaxation of the tension which had previously existed.

We may now turn to the tribal aspect of the North-West Frontier problem. This derives from the fact that North of the Gomal river the administrative border of the Indian Empire does not coincide with the political border, or " Durand Line ", and that the region between the two,—known as " trans-border " territory,



TROOPS ON THE MOVE NEAR THE KHYBER PASS.

—is inhabited by groups of semi-nomadic and bellicose peoples who hitherto have never proved amenable to administrative methods of any kind, and are in close cultural relationship with similar tribal groups living beyond the political border altogether. The extremely intractable nature of these peoples is largely explained by their environment, which consists of desolate, mountainous country in which rainfall is scanty and the means of subsistence uncertain. The result has been the development of a race of excellent physique and great powers of endurance, whose military efficacy has been vastly increased within comparatively recent times as a result of the development of modern firearms, and who have been accustomed from time immemorial to supplement their scanty food supplies by organized raids upon the more fortunately situated but less hardy peoples living in the settled Districts on the plains below. To understand the nature of the administrative problems for which these people are responsible a short geographical and historical description of the Frontier territory is required.

As the term is commonly understood, the North-West Frontier means the whole tract of country which runs from the Hindu Kush down to the Arabian Sea, including the North-West Frontier Province and Baluchistan. This territory, in addition to the wild transborder region which we have already described, contains, in the Frontier Province itself, five administered or "settled" Districts, four of which lie to the West of the Indus, while the fifth, or Hazara District, is Eastward of it. Stretching all along the Western fringe of these administered Districts, and thrusting forward here and there into trans-border territory,—as in the Malakand, the Khyber, Kurram, and Tochi valleys, at Razmak, and along the Zhob Road which runs South of Waziristan,—are cantonments or posts held by regulars, militia, frontier constabulary, or *khassadars*; whilst at the North and South respectively of the long chain of defences stand the great military settlements of Peshawar and Quetta.

The trans-border tribes are in communication with each other from North to South,—as well as with the tribes beyond the Durand Line altogether,—and military operations against any one of them are apt to produce sympathetic effects among the others. And containing as they do some of the most magnificent fighting men in the world, it is only picked and highly trained troops who can compete with them on anything like equal terms in their

own hills. They are believed to number nearly three millions, of whom at least half are males, and of these at least 550,000 are regarded as fighting men. Their armament has vastly increased within recent years, and even in 1920 there were estimated to be about 140,000 modern rifles in tribal territory. At present it is believed that the number must be at least 220,000. The Mahsuds alone can arm effectively about 14,000 out of a total of 18,000 fighting men, and the Wazirs 15,000 out of 27,000. It will thus be obvious that the military problem created by the geography and inhabitants of the Frontier is of the utmost gravity and importance.

Trans-border territory may be divided into two portions in which conditions are rather different. One is the tract which stretches from North of the Kabul river, and the other that between the Kabul and the Gomal rivers. The relations between the Indian Government and the tribes inhabiting the first of these portions have in recent years been fairly satisfactory. Chiefs like the Mehtar of Chitral, the Nawab of Dir, and the Wali of Swat may on occasion be responsible for inter-tribal fighting, but generally speaking they desire friendly relations with India. Trade between this section of trans-border lands and India is active, and the Swat River canal has provided land and employment for many hardy spirits who might otherwise have indulged in less innocent means of earning their livelihood. But in the Southern portion Waziristan, for example, until very recently presented a different problem. Its people are fanatical and intractable to a degree, and have come less under British influence than any other great trans-border tribe. Between 1852 and the period covered by our previous report,—that is to say, excluding, for the moment, the events of the year 1930-31, which will shortly be described in detail,—the Indian Government conducted no less than seventeen active operations against them, the most recent of which, namely the campaign of 1919, was also the most desperate and costly in the whole history of the Frontier. As one goes from North to South within the trans-border country, one finds that the constitution of tribal society grows for the most part more undisciplined as one approaches Waziristan, where, until the last few years, a state of chaotic licence prevailed in which every man was a law unto himself, and a well-aimed bullet was more effective than any consideration of right or justice.

The ordinary daily business of frontier administration consists in the maintenance of reasonable relations between the Govern-

ment of India and the trans-border tribes. The problem is partly diplomatic,—or, as it is called in India, "political",—and partly military. The political officers guide the tribes as far as they can along the path of peace and friendliness with India, whilst the various armed civil forces, supported by troops, stand by to repel raids or more serious aggressive actions. The military history of the frontier has been adequately written more than once, but its "political" history still remains comparatively unchronicled. The larger questions of diplomacy are, however, peculiarly interesting and instructive, owing to the important place which the maintenance of a sound policy in the North-West Frontier must always take among the preoccupations of any Indian Government. Even before the collapse of the Sikh power in the Punjab in 1849,—which gave the British a direct interest in the frontier,—the threat of an invasion by Napoleon, and the ambitious designs of the Emperor Paul of Russia, had caused the administrators of British India to look anxiously towards the North-West. And the valuable part played in the history of the Indian Empire by the long line of distinguished "politicals," starting from Malcolm and Elphinstone, who for the past three or four generations have been both the instruments and makers of frontier policy, is perhaps as yet insufficiently appreciated. The difficulties and dangers of the situation were at first immense. The frontier line inherited from the Sikhs was quite haphazard and indefinite; there was in existence no clear policy, or system of understandings or agreements; and for a whole generation British administration was based on the principle of non-interference in the troubled affairs across the border, except when fleeting punitive expeditions against individual tribes became imperative. But the advance of Russia in Central Asia during the Seventies of last century, and certain suggestive events in Afghanistan, brought to a head the dispute which had for some time been brewing between the supporters of the rival "forward" and "close border" policies, and ultimately led to a definite change of method. Sir Robert Sandeman's striking success in conciliating the hitherto hostile Baluch tribes in the South had suggested the possibility of establishing friendlier relations with the tribesmen as a whole, and the importance of doing so, or at least of having some surer means of ascertaining what was happening on the frontier hills, was obvious at a time when there was reason to fear that military operations West of the

administrative border might become necessary. The essence of Sandeman's system was friendship with and support of the tribal chiefs so long as they behaved well, and the provision of employment for the tribesmen in the police, or levies, so that they might have material incentives for supporting peace and order. A part of Baluchistan was taken under direct British control, and British influence was established throughout the rest of the country. The first step in the new treatment of frontier questions as a whole was the establishment of the Khyber Agency in the Seventies, and this led, through various stages, to Lord Curzon's famous policy. But the settlement did not attempt to undertake all that Sandeman had achieved in Baluchistan. It has in fact been well described as a mixture of the Sandeman and "close border" systems. The tribesmen were paid to protect their own country and the Indian border, and regular troops were withdrawn from advanced positions and replaced by tribal militia. But there was no occupation of tribal country and no attempt at any administration, however loose, up to the Durand Line except in the Wana, Tochi, and Kurram Valleys, where an informal administration on lines suitable to tribal conditions proved successful. Thus the North-West Frontier was not "Sandemanised" by Lord Curzon. Until 1914 this policy served its purpose fairly well, but amidst the unrest created by the Great War the Curzon system, like so many other institutions, collapsed. All through the War it was a question, at any rate in Waziristan, of holding on grimly and waiting for better days. And the third Afghan War, which broke out in 1919, sent along the whole frontier a new wave of unrest which broke in Waziristan in the bitterest and most determined fighting which the Government of India have ever had to undertake on the Frontier. When peace was restored it was realized that the time had come to try to settle the "political" part of the Frontier problem permanently, and that the attempt should begin in the old storm-centre, Waziristan.

The system thus adopted is in the best meaning of the word a "forward" policy, for it is a policy not of military conquest, but of civilization. Since 1920, fine high roads have been driven through the hills of Waziristan, linking the trans-border posts with military posts in the rear, and tribal levies, or *khassadars*,—finding their own rifles and ammunition,—have been enrolled with the ultimate object of policing the country. Thus the spirit of self-reliance and responsibility among the Wazirs and Mahsuds

should be kept alive, whilst the new cultural and economic forces will it is hoped gradually eradicate the causes which for centuries have made murder and robbery the most characteristic activities of these virile and in many ways attractive people. We shall revert in a moment to describing what actually took place in this region during the year under review, since we should first glance at the existing system of border defence in order to complete this part of our survey of the Frontier.

The Civil Defence Forces of the North-West Frontier Province fall into two main groups,—those which are established on the settled side of the border and those which are definitely trans-frontier corps. Of the former, there are first the village pursuit parties, or *chighas*, who are obliged both by law and by custom to turn out for defence or pursuit whenever a raid occurs. Government provides the villages in areas liable to be raided with a certain number of rifles, for purposes of defence, but does not attempt to supervise the *chighas* or enrol them in the service of the Crown. To co-operate with these *chighas* when more prolonged operations are necessary, selected members of the village communities are in certain areas organized into levies, drawn from the same sources as the *chighas*, but pledged to full or part time service, and receiving arms, ammunition, and pay from the Indian Government, either directly or through the local *khans* who often act both as officers and organizers of the corps.

The District Police exist on the border just as in every other part of British India, but the unsettled conditions there render it necessary for them to be better armed; otherwise their work differs little from that of the Police elsewhere. In addition, however, there exists the peculiar and vitally important force known as the Frontier Constabulary. This serves as a link between the Police and the regular military forces, its main function being to prevent raids and capture raiders and outlaws, to patrol the border and ensure the safety of roads and communications generally. Its officers are members of the Indian Police seconded from their own service. Though its posts are mainly on the edge of administered territory, many of its operations take place across the border.

The Trans-Frontier Civil Corps are three,—the Kurram Militia, the Tochi Scouts, and the South Waziristan Scouts. The Kurram

Militia is a force mainly raised locally to preserve order in the Kurram Valley, which is only a semi-administered area. The Tochi Scouts and the South Waziristan Scouts are intended to assist British political control in North and South Waziristan respectively, and to prevent raiding through Waziristan into the settled districts. They recruit only a very small proportion of local tribesmen,—none in South Waziristan. All three corps are officered by British officers seconded from regiments of the Indian Army. In addition, two other forces, whose functions and organization are not dissimilar to the rest, require mention, namely the Zhob Militia and the Chitral Scouts.

The *khassadars* are tribal levies raised for the Agency tracts to act as police and to protect communications through their tribal territory. They are more highly paid than the Levies, the Police, or the Constabulary, partly because they have to find all their arms, ammunition and equipment, and partly in order to attract the best men to the service and to secure their good behaviour and that of their fellow tribesmen by fear of pecuniary loss. Hitherto, they have been employed only in the Khyber Agency, on the Mohmand border in the Kohat Pass,—through which runs the road from Peshawar to Kohat, the next British District to the South,—and in Waziristan, where the length of the new communications and roads makes it necessary to employ over 3,500 men.

We must now endeavour to describe, from the military point of view, the grave and complicated series of events which took place on the Frontier during the summer of the period under review.* The trouble began in Peshawar on the 23rd of April, when serious rioting broke out as a result of the arrest of members of the provincial Congress Committee. A British despatch rider was killed in the course of the disturbances, and two platoons of the Royal Garhwal Rifles showed signs of disaffection and refused to obey orders. During the nine days prior to the 4th of May troops were withdrawn from the city altogether, and after it was occupied the situation remained so tense that ordinary administration was difficult to re-establish and maintain, and eventually, in August, martial law had to be imposed and kept in force until the following January. Almost immediately after the occurrence of the Peshawar riots,

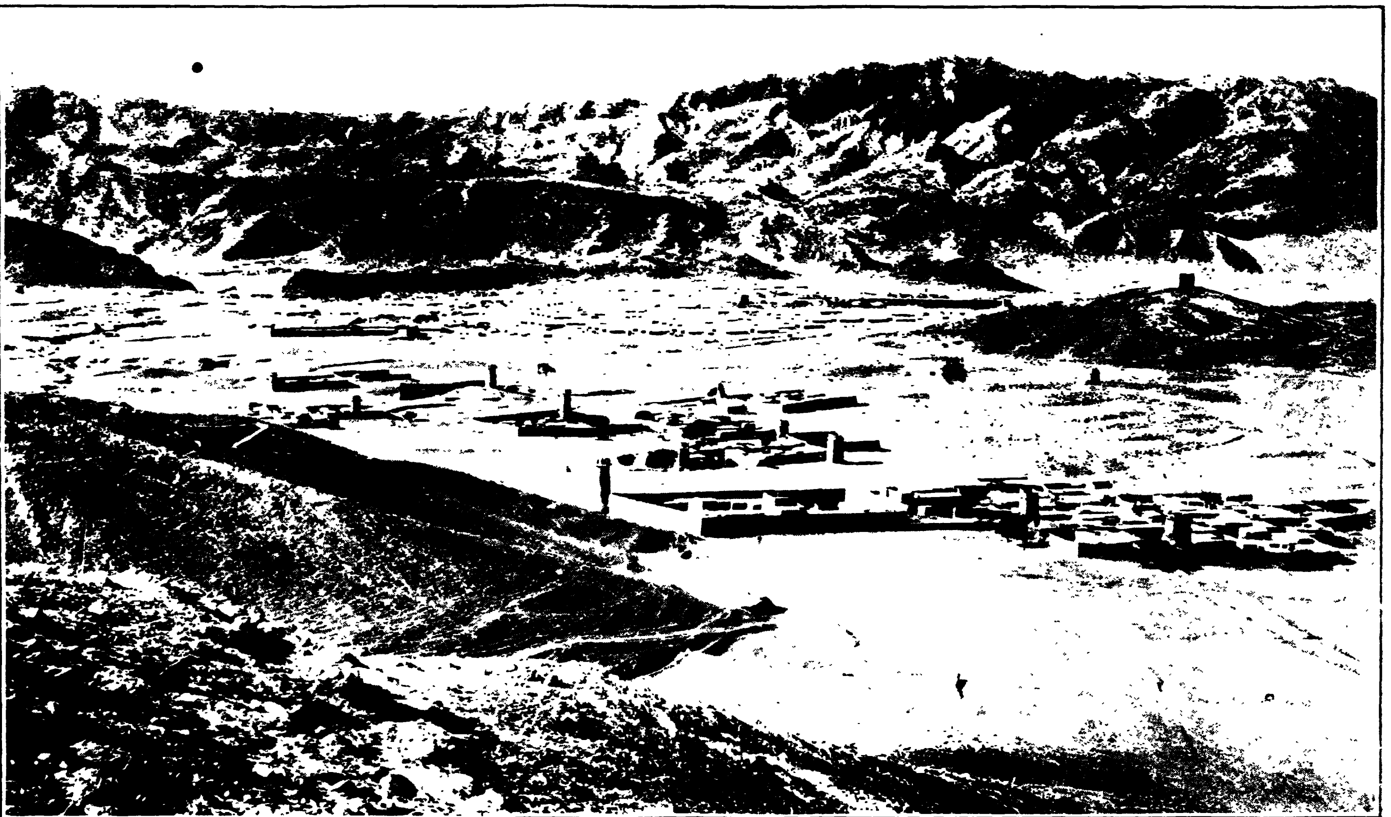
* The political aspect of these occurrences will be discussed in Chapter II.

symptoms of unrest began to be manifested all along the Frontier from Hazara District to Dera Ismail Khan. The Mohmands were the first tribal group to react, and early in May a large body of them under the leadership of the Haji of Turangzai advanced towards the border North of Shabkadr, with the object of descending on Peshawar. The Haji of Turangzai, it may be mentioned, is a relative by marriage of Abdul Ghaffar Khan, the leader of the notorious "Red Shirt" organization in the Frontier Province and an important office holder in the local Congress Committee. From the 6th of May until the 20th of June the Mohmand *lashkar*, which at times reached a strength of over 2,000 men, remained lurking in caves just across the border, and throughout the whole period was frequently attacked by the Royal Air Force. A military force was also stationed at Shabkadr to prevent the *lashkar* moving down into Peshawar District. Before the end of June the tribesmen, discouraged by their inability to advance, by hunger, and by the intensive bombing to which they had been subjected, had dwindled to half its original size. On the 22nd it had become possible to bring direct pressure to bear upon the villages to which the *lashkar* belonged, and bombing ultimatums were issued; but as a large part of the *lashkar* had dispersed by the 24th, air action against the villages was not taken.

Other tribes along the Frontier, however, had meanwhile been seriously infected by the general unrest. During the second week in May trouble suddenly broke out in Waziristan. On the 11th, a force of Madda Khel and Khiddar Khel Wazirs, about 4,000 strong, attacked Datta Khel Post,—Boya Fort also being sniped at by about 1,200 Daurs on the same day. The Wazir *lashkar* met with a stout resistance from Datta Khel Post, and the defence was supported by attacks of aircraft. On the 14th, the tribal villages were heavily bombed by the Royal Air Force and the *lashkar* dispersed that evening. The *maliks* made their submission early the next day, and the arrival of the Razmak column on the afternoon of the 15th completed the discomfiture of the hostile tribesmen in this region. The next serious event took place on the 25th of May, when there was a riot at Mardan, near Peshawar, in the course of which Mr. Murphy, Assistant Superintendent of Police, was killed; and a deplorable incident occurred in Peshawar itself on the 31st, when as a result of the accidental discharge of a rifle by a soldier standing at one of the military posts in the city, two children were

killed and a woman wounded. Great excitement subsequently prevailed, and some hours after the accident had taken place a party of British troops passing along a street was molested by a crowd and had to open fire in self-defence. The last week of May also saw a disquieting situation North of Shabkadr, where an Utman Khel *lashkar*, after crossing the Swat river, had established itself in the Jindai Khwar Nullah, from which it was only ejected on the 19th of June by regulars and scouts, after having been demoralized by repeated attacks from the air.

But of all the difficulties of the year, those provided by the incursions of the Afridis were the most serious. The first attack occurred in June. Between the 31st of May and the 3rd of June an Afridi *lashkar* amounting to well over 5,000 men advanced down the Bara and Bazar Valleys and assembled in the caves on the Western edge of the Khajuri and Aka Khel plains; and on the night of the 4/5th June about 2,000 of them invaded Peshawar District and a considerable number actually reached the outskirts of the city. When attacked in strength the next day both by ground troops and from the air, they were forced to withdraw into the hills without having actually achieved any material result from their raid, but the fact that they had managed to slip through the defences and advance rapidly right up to their objective, at a time when acute tension prevailed in Peshawar itself, was extremely disquieting, and gave the authorities cause for anxious reflection. Throughout June and July a number of other unpleasant incidents occurred. On the 9th and 10th of June the Frontier Constabulary were in conflict with a small *lashkar* in the Hazara District, and at about this time a considerable number of hostile tribesmen were on the move in Utman Khel country, and had to be attacked by aeroplanes. On the 22nd the village of Akbarpura in the Peshawar District was raided by a party of Afridis disguised as Frontier Constabulary, and a similar raid was made on a village near Mardan on the 12th of July. Throughout almost the whole of July serious tribal disturbances were also in progress further South. On the 7th a *lashkar* drawn from certain sections of the Mahsuds inhabiting the Shaktu and Maidan areas assailed the scout post at Sorarogha, and later the post at Ahnai Tangi; and for 18 days the Royal Air Force was almost continually engaged in attacking this Mahsud *lashkar* and the villages from which it had assembled. On the 10th the Razmak



VIEW OF LANDI KOTAL, NORTH WEST FRONTIER PROVINCE, SHOWING AFRIDI VILLAGES.

column moved up to Tauda China and on the 23rd to Ladha, after fighting two successful minor actions near the former place. From the 14th the hostile sections, subjected to direct pressure by the bombing of their villages and the approach of the Column began to submit; and by the 27th the last of the Mahsud sections had surrendered.

Meanwhile, however, further trouble had been brewing among the Afridis, and on the 1st of August a *jirga* was held at which it was decided to launch another attack on Peshawar. Within seven days a *lashkar* at least 5,000 strong had been raised, and on the night of the 7/8th August a large party again succeeded in eluding the troops who were waiting for them and entering the District. The next night they were reinforced by another party, and on the morning of the 9th it was estimated that there were at least 2,000 armed Afridis in close proximity to the city,—mostly in the orchards and gardens on the Southern side. One of them actually managed to get into the cantonments,—where he was shot,—and during the course of the afternoon they inflicted casualties on a detachment of cavalry which was patrolling one of the neighbouring villages. Action was taken against them both by ground troops and aeroplanes, which also attacked the villages in the Bara and Waran valleys which had allowed the *lashkar* to pass, but despite this a substantial body of Afridis maintained themselves in the country round about Peshawar for several days, and caused a good deal of damage and confusion; the railway line, for example, was breached in one place, a Government store was burnt down, and small parties even approached the city walls. But by the 12th, harassed by the operations conducted by the military and Air Force, and discouraged by the absence of support from other tribes, the Afridis began to realize they had no prospect of success, and three days later almost all of them had filtered back over the border. It is believed that, before descending upon Peshawar, they had made strenuous attempts to enlist the support of the Mohmands, the Orakzais, and the Chamkannis; and had they been successful in this, the results might have been extremely serious. But the Mohmands did not move at all, and the action taken by the other two tribes was not effective. Some Massozai Orakzais did indeed attack Badama Kurram Militia Post on the night of the 9/10th, and continued to snipe at it until the 11th; and on the 12th a party of Chamkannis made an assult on

Manosam Post; but both attacks were beaten off by the militia and the *chighas*, and the hostile tribal sections were subsequently punished and forced to submit by air attacks.

With the failure of the second Afridi attempt to enter Peshawar, the most dangerous phase of the Frontier disturbances may be said to have been over,—though it should be noted that it was the welcome given to the invaders by the villagers around the city that finally decided the authorities, on the 15th of August, that it was necessary to establish martial law. Nevertheless, throughout August and September, the atmosphere remained very strained. On the 25th of August a deplorable incident occurred at Bannu, in the South, where the authorities had been informed that a notorious *mullah* who for some time had been touring the neighbourhood inciting the tribesmen to insurrection, intended to hold a meeting; a small force was accordingly despatched to suppress the proceedings, and during the discussion which took place after its arrival a sudden and treacherous attack was made upon it, and Captain Ashcroft and eight men were killed. A severe defeat however was inflicted on the assailants, who lost over 70 killed and wounded and 80 prisoners. A serious situation also prevailed in the Kurram until well on into September, as a result of repeated assaults made by Afghan tribesmen from Khost and Hariob. The areas chiefly affected were around Kharlachi and in the Peiwar Kotal. An incursion into the valley was prevented by the gallantry of the militia and village *chighas*, though for a short time the position was so difficult that the military had to be called upon to assume control. The tribesmen finally dispersed on the 12th of September.

The activities of the Royal Air Force over tribal territory between May and September undoubtedly assisted greatly towards the final restoration of order. During each of the twelve tribal outbreaks which occurred, aircraft were employed in the first instance by threat, and subsequently if necessary by bombing operations, to bring about the dispersal of the *lashkars*. In addition, throughout the whole period, all hostile areas in tribal territory were continuously reconnoitred. This air action, combined with precautionary movements of land forces, prevented these sporadic outbreaks from assuming the more serious proportions to which otherwise they would probably have attained. Only four of the numerous tribal sections involved had been subjected to air action

against their villages before, and its deterrent effect was considerable.

During the whole period covered by these various tribal risings and incursions, the troops had also to be widely employed in helping the civil authorities to uphold the administration throughout the settled Districts in the Province. The situation in Peshawar District in particular proved extremely difficult to handle, and from the middle of May troops had to be kept almost continually on the move throughout it. The task of the military was usually to surround disaffected towns and villages under cover of darkness, in order that the civil officers might affect arrests at daybreak; and frequently it proved necessary to maintain cordons round centres of disaffection for days at a time. The administration was much handicapped, in dealing with the disturbances on the Frontier during the year, by the fact that their causes were distinctly unusual; for never before,—except possibly to some extent in 1919,—had any of the innumerable risings in this region been closely associated with the political movements and agitations of the rest of the country. Hitherto, the frontiersman had tended to concentrate his attention solely on his feuds with his neighbours and the local Government, and to pay no attention to what was going on elsewhere; and in so far as he was concerned at all with external events, it was with those of the Muhammadan countries of the West rather than those of India. On this occasion, however, it is unquestionable that much of the trouble was directly due to the activities of the Congress Party; and the extensive influence which this organization proved itself to have acquired over a predominantly Muslim population amongst which it had hitherto appeared to have but little following, was the most curious feature of the whole outbreak. The original disturbance in Peshawar, as we have seen, was directly due to the arrest of members of the provincial Congress Committee, and on several occasions during May,—as for example at Kohat, Bannu, and Dera Ismail Khan,—Congress workers gave evidence of having so strong and dangerous a control over the excitable population of the towns that their activities had to be drastically suppressed. Moreover as a result of the operations of the "Red Shirt" organization, for whose creation Abdul Ghaffar Khan was largely responsible, inflammatory ideas had been widely disseminated in rural areas. And the remarkable facts that during the course of their numerous incur-

sions into the settled Districts the tribesmen altogether abstained, —except on two occasions,—from looting in their customary manner the villages they passed through, and that the Afridis, when negotiating a settlement with the authorities, put forward demands for the release of Mr. Gandhi and the repeal of the special Ordinances in India, clearly showed that Congress agents had been active on the other side of the border also.

In view of the dangerous situation which had been created during the summer by the incursions of Afridis into the Peshawar District, special measures were taken during the latter part of the period under review to prevent a repetition of such occurrences. Since both the attacks had been made by *lashkars* which had come down from Tirah and established themselves in the *nullahs* and caves along the Western edge of the Khajuri and Aka Khel plains, it was decided that arrangements should be made to render the whole of this area accessible to motor transport. Accordingly, in October, the plains were occupied by a force consisting of the Nowshera Brigade, the 2nd Infantry Brigade from Rawalpindi, and the 9th Infantry Brigade from Jhansi, and between then and the following March a large body of men was continuously engaged in constructing roads, tracks, posts and bridges, and providing for an adequate supply of water. Quite early in the proceedings, hostile bands of Afridis made their appearance on the hills to the Westward, and remained hovering about for most of the period under review. Their attempts to interfere with the proceedings however were almost uniformly unsuccessful, and the troops maintained a moral ascendence throughout. Two squadrons of Royal Air Force aircraft co-operated with the ground forces while the work was in progress. At the end of March the Nowshera Brigade and most of the technical and ancillary troops were withdrawn, and the plain is now garrisoned by two battalions of Indian Infantry and three sections of frontier garrison artillery.

Fortunately, in contrast to the upper portion of the North-West Frontier, there were no major disturbances in Baluchistan during the year under review. The one occurrence worthy of record was an alarming incident which took place on the 4th of June, when a party of Achakzais held up two motors on the Chaman road and kidnapped Major Farley and Captain and Mrs. Frere who were travelling in them. The gang took their captives away over the Afghan border, where they had the intention of holding them to

ransom. But as a result of the energetic measures adopted by the local authorities, who received substantial help from the Hakim of Spin Boldak, the captives were released unharmed two days later.

Before we proceed to the next stage of our task, which will be to describe the organization of the military forces which are at present maintained in India, we may turn aside for a moment to consider a subject to which some space has been devoted in previous editions of this Report, namely the anti-slavery operations conducted by the Government of India on the North Eastern borders of Burma. During the years 1927, 1928, and 1929, as was explained in the memoranda submitted to the League of Nations, nearly 9,000 slaves were released in the " Triangle " and Hukawng Valley areas of Myitkyina District at a cost of over Rs. 5 lakhs, and each year careful investigations are made by the officers in command of the expeditions which are regularly sent to these regions, concerning the conditions of the slaves who had previously been released. Generally speaking they have been found to be living contentedly and on good terms with their former owners, and many have now built houses for themselves and are cultivating their own fields and settling down independently. The ex-slaves each year become increasingly conscious of their freedom, and although large numbers,—owing to the fact that they have now lost touch with their former homes and relations,—are disinclined to leave the villages of their enslavement, they realize that they can obtain redress for any ill-treatment they may have received during the year by putting the matter before the commanders of the annual expeditions. As in previous years, four expeditions were undertaken during 1930-31,—one each to the North and South Triangle area, one to the Hukawng Valley, and one to the Upper Chindwin Naga Hills. These were in charge respectively of Mr. H. N. C. Stevenson, Captain V. G. Robert, M.C., Mr. A. W. Porter, and Mr. T. P. Dewar, O.B.E. During the course of former expeditions it had been noticed that the method of conducting a detailed check of released slaves by examining their certificates was somewhat unpopular, since it reminded them and their fellow-villagers of the stigma attaching to their former position. This year, therefore, it was decided that no detailed checking should be undertaken, and officers were instructed to confine themselves to general enquiries regarding the condition of slaves

and to checking their numbers so far as possible in an unobstrusive way. This arrangement has worked quite satisfactorily. In the Triangle areas no complaints were received from ex-slaves during the year of ill-treatment at the hands of their former owners. Generally speaking it appears that there is progressively less movement and migration among ex-slaves each year; but while slaves who were born in captivity tend to settle and build houses of their own in the villages in which they lived all their lives, slaves taken by capture naturally often decide after their release to migrate to their former homes. The Officer-in-charge of the South Triangle expedition reported that several Chiefs have contrived to retain family groups of ex-slaves within the regions subject to their authority, by building separate houses for them and so putting them under an obligation to remain and to render some small service in return; and he anticipates that unless Government undertakes direct administration of the Triangle—which, as we shall see, there is now some likelihood of its doing,—and guarantees the position of the ex-slaves, these people will probably revert to their former condition. The position of single women is of course peculiarly difficult. Of all the ex-slaves in the Southern area still remaining in their former owners' houses about 80 per cent. belong to this unfortunate section of the community, the remainder consisting almost entirely of small children or idiots. Mr. Stevenson considers that the ex-owners are doing very little to help these people; most of whom moreover are unable to discover the whereabouts of their relatives. One ex-slave girl who was met asked permission to accompany the column to Sumprabum territory, in order that she might make her way to the tract in the Putao Subdivision where her relatives lived. No loans were issued in the Triangle during the year, and only Rs. 40 were issued in free gifts to ex-slave pauper women. The total number of slaves hitherto released in this area is 3,754; of these 150 have remained with their former owners; 1,805 are settled in the Triangle in their own houses; 672 are settled with relatives; 967 have migrated elsewhere; and 160 have died or are untraced. In the Hukawng Valley Mr. Porter found that the ex-slaves were happy and contented and he received no complaints. He noticed that it was difficult to make some of them realize that their emancipation did not entitle them to privileges beyond those of an ordinary villager. There are now 20 ex-slave villages in the Valley; but the individuals who were released

by earlier expeditions and who migrated to Myitkyina show no tendency to return. Of the 3,496 slaves who have hitherto been released in this region, 2,646 were still residing in it in March 1931. In the Naga Hills area slaves have never been so numerous. The total number released by Mr. Mitchell in 1929-30 was 95, and those of them who were met in the current year were found to be quite contented. A few of the released women have now married, —a state of life denied them while they were slaves. Reports of the existence of slaves still in captivity in this region were received during the year, and at the close of the season efforts were being made to release them. Information is however very difficult to obtain here,—owing to the number of different dialects in use. No cases came to light during the year of slaves being sold or offered as human sacrifices. Previous memoranda on slavery in Burma,—as well as Mr. Stevenson's report during the year under review,—have indicated that the whole problem would be much simpler to deal with were the Government able to assume direct responsibility for the administration of the areas concerned; and although the difficulties involved would be considerable, it is satisfactory to record that an important step towards direct administration was taken during 1930-31 by the application of the Kachin Hill Tribes Regulation to the Triangle and Hukawng Valley regions. The meaning of the Regulation has been explained to the Chiefs concerned, and it is believed that, if direct administration can subsequently be established, slavery must cease altogether.

We may now turn to a consideration of the organization and recent achievements of the defence forces of the country, that is to say of the Army, the Royal Air Force, and the Royal Indian Marine. The military forces in India consist of the Regular Army, which includes units from the British Army, Auxiliary Force, and the Territorial Force. These, together with the Royal Air Force and the Royal Indian Marine, are all under the authority of H. E. the Commander-in-Chief, who is also Army Member of the Viceroy's Executive Council. Besides these various organizations for defence, there are the forces under the control of the Rulers of the Indian States, the aggregate strength of which amounts to about 37,000. For administrative purposes the military forces for which H. E. the Commander-in-Chief is responsible are divided into four Commands, namely the Northern, Southern, Eastern, and Western, and in addition there is the separate Burma

District, which for geographical reasons cannot be conveniently merged in a Command. The strength of the British Army in India is approximately 58,000 officers and men. The Indian Regular Army consists of about 132,000 troops in service and 34,000 reservists, and is a very complex and varied organization. The great majority of the officers are British. Roughly speaking about two-thirds of the Indian non-commissioned officers and men are Hindus or Sikhs, and one-third Muslims, and by far the largest numbers are recruited in the Northern parts of the country. Of the various ethnic types represented, the most important are the Punjabi Mussalmans, the Gurkhas, and the Sikhs; the Dogras, Rajputs, and Jats; the Pathans, the Mahrattas, the Garhwalis and Kumaonis,—all of which have a splendid record of loyalty and of success in arms in the numerous campaigns they have undertaken throughout the world during the last century or so. The total establishment of the British and Indian Armies in regular service under H. E. the Commander-in-Chief, including Services and Departments, amounts to about 212,000 men, which represents a proportion of one soldier for approximately every 1,500 members of the country's population. The number of actual combatants, excluding followers, is about 148,000 men. In addition to the regular forces there are the two volunteer organizations, namely, the Auxiliary Force, which is recruited solely from Europeans or Anglo-Indians and has a strength at present of about 32,000 and the Territorial Force, which totals about 15,000 men, and except for some of its officers is of purely Indian composition, and consists of various Provincial and Urban units, the University Training Corps, and the Medical Branch.

In our two previous Reports we have devoted some space to describing the important changes in military organization which have been in progress as a result of the decision to "mechanize" certain units. The normal improvements and replacements of the Army's equipment had been considerably curtailed as a result of the Government's acceptance of the military recommendations made by the Indian Retrenchment Committee in 1923, and by the year 1928-29 the time had come when it was unsafe to allow this process to continue further. Steps were accordingly taken to make good the shortages,—which had been foretold at the time of financial stringency when the Committee's recommendations were accepted,—and to bring the equipment of the armed forces

in India more into line with that which had been evolved in Great Britain, and in foreign countries, as a result of the rapid advance in the adaptation of mechanical invention to military needs. During the year under review still further progress was made in the mechanization of combatant and transport units which has been described in recent Reports, attention being devoted in particular to the 1st Divisional Ammunition Column, the Field and Signal Troops and Train of the 2nd Cavalry Brigade, and "B" Corps Signals. Mechanical vehicles have also been added to the establishments of certain Divisional Headquarters Companies and Field Companies of the Sappers and Miners. In addition, the Medium Artillery has now been completely mechanized and reorganized. As a result of this policy, animal transport has been greatly reduced, and is now employed only for the first line of all fighting formations and the second line of covering troops formations. The second line transport for the Field Army at present consists of 6-wheeled M. T. lorries.

In 1927 a scheme,—officially known as the Amenity Programme.—was drawn up for providing better accommodation for British and Indian troops in this country; and a definite undertaking was given to the Secretary of State that, assuming that an annual budget provision of Rs. 98½ lakhs were made for the purpose, the first item on the programme,—namely the reconstruction for Indian troops' lines,—would be completed within seven or eight years from the 1st of April 1927, while the other two items,—that is, the improvement of hospitals and the electrification of British troops' barracks,—would each be completed in four years. At the end of the year 1930-31 the work on the last two items had been practically completed according to plan, except for certain details which will be finished during the subsequent twelve months, while Rs. 2,90 lakhs worth of work had still to be done in connection with the reconstruction of Indian troops' lines; and since a sum of Rs. 65 lakhs was provided for this purpose under the 1931-32 budget, no more than about Rs. 2,25 lakhs will be required for the work which remains to be done during the three years ending on the 31st of March 1935.

At the request of the Secretary of State, a memorandum was despatched to London in October 1930 describing the present position with regard to the housing accommodation available for officers at the various military stations in India, which is admittedly

unsatisfactory. In some places, where difficulty has arisen not from an actual shortage but from the attitude of private owners, the expenditure of comparatively small sums of money has hitherto often provided a satisfactory solution; but the problem seems likely to become increasingly pressing, owing to the tendency of rents to rise; moreover the process of Indianizing the Army will scarcely lessen it, and may indeed in some respects render it more complicated. It is however estimated that to provide officers' quarters up to the extent of the authorized strength of King's Commissioned officers in each station, so as to make the Army independent of privately owned bungalows, would cost no less than Rs. 3,58 lakhs; and until the programme of reconstructing Indian troops' barracks is completed it is recognized that it will be impossible to allot larger sums for improving officers' accommodation than are ordinarily available at present. Some relief however may be obtained from the Cantonments (House Accommodation) Amendment Act, 1930, which with the exception of clause 6, was passed during the 1930 Delhi Session of the Legislature. By this means the procedure for appropriating houses for the use of officers has been expedited, and the local military authorities have been instructed to make use of the Act whenever the situation renders its application necessary.

A certain amount of Indianization has been effected during recent years in the arsenals throughout India and Burma, under a scheme known as the Storeman Scheme, whereby Indians are appointed as Assistant Storekeepers in the Indian Army Ordnance Corps in replacement of the British "other ranks" who have hitherto undertaken storekeeping duties. Arrangements have also been made under the scheme whereby ordinary Indian storemen of comparatively poor qualifications may eventually rise to the position of Assistant Storekeepers. The scheme has had to be financed by reducing the number of Indian sepoys employed in the Ordnance Corps, which makes it appear as though little or no increase in the Indian establishment has actually been effected under it, but it at least has enabled a larger number of educated Indians to be employed than was formerly possible, which, in view of the very serious amount of unemployment which prevails throughout the Indian middle-classes, is a satisfactory development. For administrative reasons, the Arsenal and Clothing Depôt at Madras had to be closed down during the year. This will have a disad-

vantageous effect on local labour; but since the work of these establishments is being transferred to other arsenals, there will be a corresponding increase in the amount of labour employed in these places. An appreciable saving will it is anticipated be effected as a result of the sale of the buildings at Madras occupied by the Arsenal and Clothing Depôt. In most of the arsenals throughout the country labour *bureaux* have now been instituted and are functioning satisfactorily; and a recent development of some interest has been the establishment of maternity centres for the wives of Indian sepoys.

As a result of the existing programme for Indianizing the commissioned ranks of the army, twenty Indian candidates obtained admission to the Royal Military College, Sandhurst, during the year under review,—ten of them having passed the examination in June and the other ten in November. In addition, two Indian officers holding Viceroy's Commissions were nominated by H. E. the Commander-in-Chief for training at Sandhurst, in order that they might qualify for the grant of King's Commissions; the total number of officers of this type at Sandhurst in 1930-31 was therefore five. Four Indian candidates were admitted to the Royal Military Academy, Woolwich, during the year. As regards military education in India, a noteworthy event was the opening of the King George's Royal Military School at Ajmer, for training Indian soldiers' sons for entry into the Army as a superior type of educated recruit. This school is planned on the same lines as those established at Jullundur and Jhelum in 1925.

There are no important developments to record with regard to the Indian Territorial Force, which, as in the previous year, consisted of 18 Provincial Battalions, 4 Urban Units, 11 University Corps Units, and a Medical Branch. Further improvement was reported in the efficiency of the Provincial Battalions, but the Urban Units have made little or no progress either in strength or efficiency. Units of the University Training Corps Units, whose efficiency varies greatly, have proved themselves to be of educational value, but as few of their members subsequently enrol in the Provincial or Urban Units, they cannot be said to be functioning in the way it was hoped they would as recruiting grounds for the adult branches of the Territorial Force.

Readers will recall that in our Report for 1928-29 we mentioned that an arrangement had been made whereby the Military Budget,

exclusive of expenditure which might be incurred as a result of the recommendations of the Auxiliary and Territorial Forces Committee, would be stabilized until the year 1931-32 at an annual figure of Rs. 55 crores. In 1929-30 the period was extended to 1932-33, and from 1930-31 onwards the stabilized figure was to be reduced from Rs. 55 crores to Rs. 54·25 crores. During the year under review the period was further extended by one year and the figure of Rs. 54·25 crores was reduced to Rs. 53·63 crores.*

In our previous Report we were able to record that, in 1929-30, the number of occasions on which troops were required to stand to in aid of the civil power was small, amounting as it did to 37 only. In 1930-31, on the other hand,—largely owing to the progress of the Civil Disobedience Movement,—no less than 115 requests were made for the assistance of troops. In 71 of these instances they only stood to in barracks as a precautionary measure, and on 28 of the remaining 44 occasions they were posted at strategic points but were not in point of fact used. The number of times in which troops were actually employed in quelling disturbances was therefore 16. Of these,—apart from the occurrences in the North-West Frontier Province which have already been described,—the most serious occasions were at Chittagong, in April, when a party of armed terrorists attacked the armoury and overpowered the guard, at Sholapur in May, where martial law had to be declared as a result of the rioting there, and in Burma from December onwards, owing to the outbreak of rebellion.† Considering the unprecedented political turmoil that was taking place throughout the country during the year these figures are lower than might have been expected. In every case in which troops were actually used for dealing with disturbances they quelled them without serious loss to themselves. Apart from the instances in which they were required to stand to in aid of the civil power, troops were also used during the year to march through disaffected areas to show the flag, and in none of these flag marches did any clash occur with the local inhabitants.

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We must now describe the organization and functions of the Royal Air Force in India. As at present constituted, the Force is composed of eight Squadrons consisting either of "army-co-opera-

* The actual expenditure was considerably less than this.

† These three incidents are discussed in more detail elsewhere, as the Analysis of Chapter Contents will indicate.

tion" or bombing aeroplanes, together with a Flight of heavy transport machines. In addition there are two supply Units, namely the Aircraft Depôt at Karachi and the Aircraft Park at Lahore, whose functions are to erect and overhaul aircraft and acquire and distribute stores. The total aircraft strength of the Force during the year was 215 aeroplanes, consisting of 109 Westland Wapitis, 100 Bristol Fighters, 2 Clives, 2 Hawker Harts, 1 Hinaidi, and 1 Moth. The Bristol Fighters in the "army-co-operation" Squadrons are now being replaced by Wapitis, and in addition to this process, which will take some time, it has been decided to re-equip two of the bombing Squadrons during 1931-32 with Hawker Hart aircraft. The total personnel of the Force in 1930-31 amounted to 2,215 British officers and men and 1,296 Indian officers and men; some alterations in the establishment were effected during the year as a result of the up-grading scheme initiated by the Air Ministry. Geographically, the combatant arm of the Force in India is concentrated almost exclusively in the North-Western portion of the country, one Squadron being stationed at Ambala, and the rest distributed along the Frontier between Risalpur and Quetta. As has already been explained, the whole organization is under the ultimate control of H. E. the Commander-in-Chief, but its administration is in the hands of the Air Officer Commanding in India, who has his own separate staff; during the year under review Air-Marshal Sir Geoffrey Salmond, K.C.B., K.C.M.G., D.S.O., who had held this post since 1926, was succeeded by Air-Vice-Marshal Sir John Miles Steel, K.B.E., C.B., C.M.G.

There is no need for us to emphasize the great utility of the air arm in war, but perhaps it will not be out of place to draw attention to the particular importance which it possesses in this country. To begin with, India is an essential link in the chain of aerial communications between Great Britain and Australia, and although at present the link appears safe from all reasonable likelihood of attack, the risk of it occurring cannot be discounted, in view of the likelihood that the effective striking range of aircraft may soon be considerably increased. Again, when serious internal disorders arise, the potential value of transport aircraft in this country is great, owing to the speed with which they can convey men or stores from one corner of the country to another, and the fact that as compared with the more developed States of Europe or America,

the system of roads and railways in India is disproportionate to the magnitude of the population. Yet another way in which the Royal Air Force can render important services to the country,—as we have already seen earlier in this Chapter,—is in dealing with unrest and disorder in inaccessible localities on the Frontier; and on several occasions prior to the period now under review submission has been enforced and order restored by the use of aircraft. Apart from their purely military value, the uses of aircraft for peaceful purposes have received remarkable confirmation in recent years, as for example by the transport of 568 people from Kabul to India during the disturbances in Afghanistan in 1928, and by the useful services rendered to the inhabitants of the Indus valley region during the period covered by our previous Report, when the bursting of the Shyok dam caused serious flooding and devastation over wide tracts of country. In 1930-31 nothing spectacular of this kind was achieved, except perhaps during the floods in Sind in August, which caused a breach in the railway line between Jacobabad and Reti, and prevented the carriage of mails; the assistance of the Royal Air Force was accordingly requisitioned, and approximately 95,000 lbs. of mail were successfully transported over the breach by its machines in the course of 304 flights.

Work on the air route for land aircraft from India to Singapore was completed during the year, and consists of a chain of landing grounds prepared along the Arakan and Tenasserim coasts of Burma from Chittagong to Victoria Point, the intermediate stations being Akyab, Kyaukpyu, Sandoway, Bassein, Rangoon, Moulmein, Tavoy, Kadwe, and Mergui. Amongst other events of interest that occurred in connection with the Royal Air Force during the year may be mentioned the despatch of six Indian cadets to the Royal Air Force College, Cranwell, to undergo two years' training there prior to forming the nucleus of the Indian officers for the proposed Indian Air Force; the official visit paid by Air Marshal Sir Geoffrey Salmond to the Siamese authorities at Bangkok by air in November; and the successful display given by the Royal Air Force at New Delhi in February, during the course of the Inauguration Ceremonies. Finally, mention must be made of the tragic loss of His Majesty's Airship R101 in October, while on her way from Cardington to Karachi, which seems, for a time at any rate, to have destroyed the hopes entertained for many years that it would prove possible to inaugurate a regular airship service between England and India.

The Royal Indian Marine has the distinction of being able to trace its history back to early in the XVII century, when the East India Company established a small naval Force to protect its trade routes and factories against foreign foes; and since then there have been numerous occasions on which it has rendered notable services, its record of achievement during the last war, for example, having been,—in relation to its size,—remarkable. But after 1919, owing to a variety of factors which have been indicated in previous issues of this Report, its activities were severely curtailed, and it was not until 1928 that the scheme of re-organization which had been outlined three years earlier by the Departmental Committee presided over by Lord Rawlinson could be put into effect. The circumstances of the change were duly recorded and described in our Report for the year 1927-28; the essence of it was the recognition of the Service by Parliament as one of the unitary fighting forces of the Empire, and its establishment on a purely combatant basis under the command of a Rear-Admiral on the active list of the Royal Navy. All ranks and ratings of the Service now wear the same uniform as the Royal Navy, except for distinctive buttons having the Crown and Anchor superimposed upon the Star of India. The total authorized personnel of the Service, exclusive of the dockyard workers, is at present 122 commissioned officers and 1,055 warrant officers and ratings; and its ships consist of 4 sloops,—one of which, the "Hindustan", reached Bombay from England, where it had been constructed, in December,—2 patrol vessels, 5 trawlers, 2 survey ships, and a depôt ship for training purposes; they fly the Blue Ensign with the badge of the Star of India at the bow, and the White Ensign at the stern.

Comparatively few noteworthy events occurred in connection with the Service during 1930-31. As a result of representations made by Rear-Admiral Walwyn, R. N.,—the Flag Officer Commanding,—who had come to the conclusion that in the interests of efficiency it was desirable to institute certain sea-going commands for Captains of the Royal Indian Marine, the ships "Clive" and "Cornwallis" were declared Captains' commands during the course of the year with the approval of the Secretary of State; at the same time arrangements were made for reverting the Depôt ship "Dalhousie", for which a Captain was included in the *cadre* of executive officers, to a Commander's command. A decision was also reached during the year that the senior engineer officer of each of His Majesty's Indian ships "Clive", "Cornwallis", "Hindustan" and

" Lawrence " should be of the rank of Engineer Commander instead of Engineer Lieutenant-Commander, and the appointment of First Assistant to the Engineer Manager was reserved for an officer of the rank of Engineer Commander. With a view to training suitable Indians in the Service as wireless operators, five ex-naval ratings were recruited in the United Kingdom for a period of five years. Two examinations of Indians for entry to the commissioned ranks of the Service were held during the year. One, which was a special examination of cadets of the Indian Mercantile Marine Training Ship " Dufferin ", took place in Bombay in May, the syllabus prescribed by the Admiralty for the purpose being modified as regards English and History. Unfortunately none of the ten candidates who appeared for the examination obtained the qualifying marks. The other, which was an open competitive examination, was held at Delhi in November. Of the nineteen candidates who appeared at it, only two,—one for the executive branch and the other for the engineering branch,—were declared successful. Readers of our previous Report will recollect that the endeavours made in 1929-30 to recruit boys from the inland parts of India for training and admission as ratings in the Service had met with considerable success, and further efforts in this direction were accordingly made during the period under review. Recruiting parties were sent to the Punjab both during the spring and autumn, one of which secured 43 boys and the other 49.

We must now address ourselves, in an amount of space which, for such a subject, is necessarily inadequate, to a consideration of the relation between the organization of India's forces of defence and her nationalist aspirations. This is probably the most crucial and difficult of all the problems with which the country is at present confronted. There is no necessity for us now to emphasize, on the one hand, the genuineness and intensity of the nationalist movement in India, which is obviously giving rise to most of the phenomena characteristic of similar movements in other countries; nor, on the other hand, should we labour the fact that the movement is nevertheless restricted in scope, and that the proportion of the population which is more conscious of belonging to an Indian nation than to a particular race or class or creed or community is still small,—and may indeed become smaller when the power of the British is reduced, since many of those who call themselves nationalists have little in

common beyond their dislike of the dominant foreigner. For our present purpose all we need bear in mind is that it is simply upon this fundamental contrast between Indian nationalism and what may be called Indian separatism that the difficulties of the problem of defence, as they confront the country nowadays, are ultimately based.

No nation, in so far as it is aware of being such, can be content that the responsibility for its defence should be in the hands of what it regards as a foreign power; and from the very outset of the Nationalist Movement many of its adherents showed at least a theoretical recognition of the fact that, if their political aspirations were ever to be fully realized, they must secure control over the direction of military as well as civil policy, and demonstrate to the world that Indians were able to undertake the defence of their country without extraneous help. Nevertheless for many years discussion of military problems in nationalist circles was infrequent, and when it occurred consisted largely of vague accusations that the British Government, by "disarming and emasculating the people", had done its best to prevent their political advancement. Few advocates of the nationalist cause showed signs of having seriously attempted to understand the numerous technical problems upon which the defence of India depends; and the force of their arguments was weakened,—at least in the view of the British official,—by the fact that they and their kind as a rule had themselves neither aptitude nor inclination for a military career. Since the War, however, a noticeable change has taken place. In the Press, on the platform, and in the Legislatures, criticism of the Army Department has become a more and more prominent feature of nationalist activity, and it is often constructive and well-informed. There seems to be a widespread apprehension that, unless the Government can be forced to initiate really substantial changes in military policy, Indians must for ever suffer the humiliation of being considered by the rest of the world to be a subject people, incapable of self-defence. Accordingly, in place of the sweeping but indefinite accusations that used formerly to be made, the educated classes now put forward three concrete demands. They ask in the first place that the commissioned ranks of the regular Army should be rapidly Indianized; secondly, that an endeavour should be made to extend the scope of recruitment, by enlisting troops from races other than those which the military

authorities have been accustomed to consider "martial"; and thirdly, that the existing facilities for giving Indians some military training in the Territorial Force should be improved. At the same time there is an insistent complaint that the expenditure incurred on the defence of the country is at present excessive.

In our examination of these questions, it will be convenient to devote ourselves at the outset to considering the last of them, namely the question of effecting a reduction in military expenditure. Now it is unquestionable,—and the point will be clearly brought out if the reader will refer to the diagram reproduced opposite page 367,—that the proportion of India's annual revenues which is spent on her defence is large; it forms, in fact, substantially the biggest single item of expenditure which the country incurs. Out of a total average net revenue, from both Central and provincial sources, of about Rs. 220 crores per annum, sums amounting to more than Rs. 50 crores are as a rule absorbed annually by the defence services. Amid the rising tide of vehement criticism which is made on the subject of this expenditure, four main lines of argument may be discerned. Firstly, there is an appeal to principle: it is urged that, since military expenditure, from the point of view of accepted economic theory, is entirely unproductive, and contributes nothing to a country's general wealth and welfare, much more strenuous efforts than any that have hitherto taken place should be made to reduce it; that India simply cannot afford to disburse such lavish sums for the upkeep of her defence forces when the general state of the country, and in particular the standard of living and the productivity of the poor, call for such obvious and drastic measures for improvement; and that the economic embarrassments with which she is confronted are so grave that certain risks must be taken, such as other nations in similar straits have taken in the past. Closely associated with this is the contention that military expenditure on the scale which has become customary in this country directly inhibits the application of revenue to "national-building" ends, and that in consequence India's national aspirations are probably by design and certainly in fact frustrated by the magnitude of the army she is forced to maintain. This leads us to the third point, namely, the argument that the external perils to which the country is exposed are actually not nearly so serious as the authorities for their own purpose make out; that the possibility of attacks from the sea, or

any major offensive action on the part of first-class Western Powers, is now almost negligible, owing to the existence of the League of Nations; that the likelihood of incursions through the land frontiers of the East, North-East, and North is extremely remote; that Russia has actually never attempted to invade India,—although constantly used by the authorities as a bogey with which to intimidate critics of their military policy,—and is unlikely to do so now; and that the only real danger lies in the chance of conflict with untrained, ill-equipped and nomadic tribesmen in the North-West, whose total fighting strength, even when they are able to combine, could not exceed 750,000 men. The fourth point is the allegation that the military forces in the country are used less for the service of India than for the furtherance of British Imperial interests; and in particular that the retention in this country of such large numbers of British troops, which cost very much more than Indian troops do, is quite unnecessary, and that they are actually maintained as an army of occupation,—and incidentally also form a useful hidden reserve for the forces at home.

We next move to the question of the Indianization of the commissioned ranks of the Army. In this connection it is argued that whereas in the Civil Departments some progress may be admitted to have been made towards fulfilling the Declaration of August 1917,—whereby Parliament undertook that Indians should be increasingly admitted to all branches of the administration,—no sincere or substantial attempt has been made to implement this policy on the military side; and that the purpose of this inaction on the part of the Government is to perpetuate the dependence of the country on British military officers for the management of its forces of defence. In particular, attention has been concentrated of late years on the policy of the Government in connection with the recommendations made by the Skeen Committee in 1927, which *inter alia* urged the abolition of the "Eight Units" scheme initiated by Lord Rawlinson in 1923, and the establishment of an Indian "Sandhurst" by 1933. The object of the "Eight Units" scheme was that instead of drafting young Indian officers indiscriminately to all sections of the Army, attention should be concentrated at first on the progressive Indianization of eight units only; and it is contended that, in deciding despite the recommendations of the Skeen Committee, that this scheme should be proceeded with, the Government was actuated by the wish to avert

the painful moment when young British subalterns, on first entering the Indian Army, might be faced with the prospect of having to serve in subordination to Indian officers; in consequence, it is alleged, the possibility of Indianizing the higher ranks of the Army as a whole has been deferred for an indefinite period. Official policy with regard to the other proposal made by the Committee,—namely that an Indian "Sandhurst" should be established by a specified date,—has also come in for some harsh criticism; for, during the four years between 1927 and the period now under review,—when a decision in favour of the proposal was made as a result of the Round Table Conference in London,—the Government has, it is alleged, failed to declare its real intentions; and it is contended that this inaction could only have been inspired by a sinister desire that the whole project should come to naught. As regards the facilities at present provided for the training of Indian cadets in England, it is alleged on the one hand that the number of vacancies set aside for them annually at Sandhurst, Woolwich, and Cranwell is too small, and on the other that the authorities make no sincere attempt to encourage likely candidates to enter for them; and also, that those who do compete, especially for the vacancies at Woolwich and Cranwell, are subjected to unjust discrimination of various kinds. Finally,—a more academic point,—it is argued that not only is the claim that Indians, by nature, have not the capacity for officering the Indian Army as efficiently as Britishers an unfair one,—since it is owing to the policy of the very people who put it forward that the matter has hitherto been rendered incapable of direct proof,—but also that it is intrinsically unsound, since India certainly showed her ability to produce formidable military leaders in past centuries, and even now, in the Indian States, there exist completely Indian armies which, considering the many disadvantages to which they are subjected, cannot reasonably be said to be incompetently commanded. Moreover it is pointed out that in the last War no European country experienced any serious difficulty in obtaining, from its untrained civil population, plenty of temporary officers who proved themselves in many ways quite as capable as those who belonged to the regular armies; and it is accordingly claimed that among the Indian people there must also be a large reserve of potential military leaders who would prove their worth in an emergency.

The objections of the nationalists to the recruiting system now require consideration. At present about 30 per cent. of the total area of India exclusive of Burma,—that is to say the Punjab, the independent State of Nepal, the United Provinces, the State of Jammu and Kashmir, and the North-West Frontier Province,—provides about 87 per cent. of the troops, whereas such vast and populous regions as the Presidencies of Bombay and Madras, for example, together furnish only about 9,500 men, the Central Provinces, and Bihar and Orissa, a mere 400 in the aggregate, and Bengal and Assam, none at all. Opponents of the Government are wont to urge that not only is this geographical discrimination intrinsically unjustified, but also that the motives for it are not above suspicion. For it is contended that the so-called "martial races" of the North and North-West, upon whom the authorities concentrate so much of their attention, are very far from having the practical monopoly of natural military aptitude which is often claimed for them. The people of the humid coastal regions, and particularly of the Gangetic Delta, it is true, may generally speaking be unsuited to bear arms, but the uplands of Central and Southern India have always produced men of sturdy physique and remarkable endurance; the Mahrattas, for instance, in the XVIII century, clearly demonstrated their right to be classed among the most formidable fighting races in the country; Moplahs, in more recent times, have also shown themselves be by no means deficient in pugnacity and staying-power; and throughout the whole of the more Southerly portion of India there exist many other peoples,—such as the Lingaiyets and the Mahars,—from among whom excellent military material could, it is argued, be obtained. In itself, the supposition that the military possibilities of the peoples of Southern India have been insufficiently appreciated would scarcely have evoked much hostile criticism, since conservatism in recruiting methods has at least the obvious justification of providing the army with men of types whose good qualities are already well known to the authorities, who respect each other, and whose courage in times of emergency, unlike that of untried troops, can be relied upon. On purely military grounds, therefore, the system may, it is conceded, be fairly sound, except in so far as it is unenterprising; but there has been a growing realization of late that, from the point of view of the advancement of the nationalist cause, it has some

very disconcerting implications. For when the inhabitants of vast tracts of the country have for generations had practically no opportunity for military service, and recruits have been obtained from a few selected races only, what prospect, it is asked, has India of obtaining, within any reasonable time, what might be considered a truly national army? How far would it be possible, under a *Swaraj* Government, for the populace to be sure that armed forces constituted on their present racial basis would loyally serve the interests of the country as a whole, and refrain from exploiting their exceptionally favourable position to their own advantage? The politically-minded classes are now acutely aware of the reality and complexity of these questions, and of the fact that a number of embarrassing incidental problems are liable to arise from them,—as for example that provided by the attitude of the Sikh community in the Punjab, which, largely on the strength of its military attainments, has been able to put forward claims for political representation substantially in excess of what would be warranted by its mere numerical importance. Accordingly, since nationalist leaders have acquired the habit, as soon as they recognize the existence of an obstacle in their path, of assuming that the Government must in some malicious way have been responsible for creating it, it is now frequently asserted that the whole recruiting system, instead of being based simply on military considerations, was actually inspired by the calculation that, by obtaining the majority of the troops from the Northern part of the country, and fostering their sense of racial difference from their compatriots, the British might be able to prevent the complete realization of Indian nationalist aspirations and maintain their own dominant position indefinitely.

Criticisms of the Government's action in the matter of the Territorial Force are as a rule based on the argument that what has hitherto been done is half-hearted and parsimonious, and that an active policy for expanding the size, equipment and activities of the Force,—supplemented by arrangements for inculcating military discipline and physical training in the schools,—must be at once embarked upon, if the ardour and aspirations of Indian youths are to be harnessed for the service of constituted authority rather than diverted into revolutionary channels.

The answer of the Government to these various criticisms has been set forth in detail in so many previous issues of this Report,

that it seems scarcely necessary, this year, to place before the reader extracts from the actual speeches in which it has been enunciated. But it will perhaps not be out of place if we indicate briefly some of the outstanding points which are raised, by no means exclusively on the part of officials or recognized supporters of the existing administration, in opposition to the line of argument we have hitherto been summarizing. The first point put forward is that the dangers which the defence forces are intended to withstand are very much more serious and substantial than opponents of the Government are wont to assert,—a contention whose justification the reader will be able to appreciate by referring to the general description of the geographical aspects of the defence problem which is set forth in the earlier part of this Chapter. And apart from the peculiarities and magnitude of these dangers, it is argued on general grounds that an expenditure of Rs. 54·30 crores, or under £41,000,000,* on the defence of a territory as large and populous as the whole of Europe excluding Russia, is not in the face of it excessive when compared with that of other countries. The corresponding expenditure during 1930-31 of France, Italy, and Germany, for example, amounted to £89,000,000, £50,000,000, and £34,000,000 respectively; the United States, with a population amounting to only about 120 millions as against India's 353 millions, and with land frontiers whose liability to violation is negligible, spent £172,000,000 on her defence forces during the same period; and the expenditure of Soviet Russia, whose total inhabitants, despite her geographical immensity, do not number much more than 140 millions, amounted to no less than £119,000,000.† The case of Soviet Russia is peculiarly significant, since as compared with the other States we have mentioned, the standard of living among her predominantly rural population is more analogous to that of the Indian masses; yet despite the armaments which she nevertheless maintains, and the facts that her borders march in close proximity to those of India, and that she is not a member of the League of Nations, it is, as we have seen, asserted that the meagreness of the average indi-

* As will be seen in Chapter VI, the estimated expenditure for 1931-32 is only Rs. 52·45 crores or about £39,000,000.

† The figures quoted include military, naval, and aerial expenditure, and those for France, Italy, Germany, the United States, and Soviet Russia are extracted from the 1931 issue of the League of Nations Armaments Year Book.

vidual income in India in itself constitutes a complete justification for a substantial cut in military expenditure. To this it is retorted that the reduction which has already been effected since 1923, when the figure stood at over Rs. 65 crores as against the Rs. 52·5 crores which are at present required, has brought the forces of defence to a state beyond which, under existing conditions, the margin of safety would be overstepped; and that although the poverty of the Indian masses is a deplorable fact which all reasonable steps must be taken to alleviate, the extent of a people's average income per head has no bearing at all on the question of their natural vulnerability. Moreover it is pointed out that if,—instead of considering the military expenditure of various individual countries, all of which are much less populous than India,—we take the whole of Western Europe as our unit of comparison, the total cost of the military, naval, and aerial armaments maintained there is so vastly in excess of anything that India has to pay, that her inhabitants probably contribute not only actually, but also in proportion to their income, less than do the people of the West towards the maintenance of the forces upon which their security depends. At first sight such a comparison may perhaps appear scarcely legitimate, since despite the similarity in the size of the populations of the two areas, Europe is not a unit, but is split up into a number of politically separate members, whereas India constitutes a single administrative whole; but on the other hand it is clearly true that her unity is largely superficial, and that she needs to maintain within her borders large numbers of troops to deal with the internal disturbances by which it is liable to be destroyed,—whereas in the States of Europe the military are required almost exclusively for external purposes. If, therefore, the existing arrangements for the defence of India were to be seriously impaired, she would not only be deprived of the means of coping with external foes, but might quite conceivably disintegrate into a number of mutually hostile units, which would necessitate the maintenance of armaments on a much larger scale than at present. And further, were the connection with Great Britain to be forfeited, so would be the protection afforded by the British fleet, for whose upkeep the contribution India makes is so small as to be utterly disproportionate to the services she at present can obtain from it; and in view of the natural vulnerability of her coasts, to which attention has already been drawn, she would

consequently have to face the prospect either of attack or of heavy expenditure in this direction also. Thus it is contended that there is no question whatever of the expenditure on defence being designed, by its magnitude, to starve the " nation-building " services, and that the plain fact is that were the military budget under present circumstances to be reduced substantially below the existing level, all prospect of building a nation, or even of maintaining a reasonably efficient and satisfactory administration of any kind, would be jeopardized to an extent which would constitute a complete abnegation of statesmanship and sanity on the part of those at present responsible for the welfare of the Indian masses.

We now turn to the question of the Indianization of the commissioned ranks of the Army. The official reply to the criticisms of the Government's policy in this matter is now so familiar to readers of our annual Reports that we do not propose to recapitulate it; but here again some more general remarks based on the points raised independently by private individuals in the Legislatures, the Press, and elsewhere, as well as by spokesmen of the Government, may not be inappropriate. The fundamental problem to which attention is drawn at the outset is the extraordinary difficulty, indeed the impossibility, of establishing a coherent, efficient, and reliable army officered by Indians within the time desired by the critics of the Government. To start with, there are such immediate practical obstacles as the problems of seniority and promotion; for even were it considered desirable to embark on such a drastic policy of Indianization as would enable the recruitment of British subalterns to the Indian Army to be stopped altogether, it would nevertheless be impossible by any of the ordinary processes of continuity such as are necessary to the maintenance of military efficiency, to obtain an army of purely Indian composition until the Fifties of this century at the earliest, owing to the time which must elapse before a subaltern in the normal course of events is able to earn command of a regiment. But in any case to entertain such an idea is at present of little more than academic interest, if only because of the serious difficulties that until very recently were experienced in obtaining, even for the existing number of vacancies at the Cadet Colleges in England, a sufficiency of Indian candidates who were considered really fitted to hold the King's Commission. It was not until 1928,—nine years after Indians were first admitted to Sandhurst,—that pro-

perly competitive conditions were established, and enough qualified Indian cadets were found to fill the places set aside for them. When the opponents of the Government suggest that this state of affairs is capable of a different explanation from that which is publicly assigned to it, the authorities retort that the mere ability of candidates to pass written examinations is insufficient to demonstrate that they would make capable officers, unless they can also give indications of possessing certain essential qualities of character and physique which many of the Indian entrants have hitherto appeared to lack; and that deficiencies of this kind are peculiarly fatal where Indian candidates for the King's Commission are concerned, in view of the sepoy's distrust of innovations, and his strong preference for the leadership of officers whose race or family is such as to suggest their possession of inherent military aptitude. There are of course numerous supporters of the Government who believe that attempts to Indianize the commissioned ranks of the army might reasonably have been made many years sooner than they were; but to speculate as to what might have been done in the past is, it is contended, futile now; and since only 11 years have elapsed since the decision to confer King's Commissions upon Indians was made, it is inevitable that the results hitherto achieved from a process which must, from its very nature, be gradual, should appear to those who do not appreciate the technical difficulties associated with it to be disappointingly meagre. Few reasonable men would however deny that a country's forces of defence ought, on principle, to form a less legitimate field for drastic and impatient alterations of policy than any other part of the public services, owing to the appalling consequences to which the whole community would be exposed were the changes to prove ill-founded; and the peculiarities of the problem of defence in this country are so obvious, that the cautious attitude which the authorities have adopted towards Indianization should, it might be thought, be more widely recognized to have been well founded than it is. In any case, irrespective of whether the Government's policy has hitherto been right or wrong, the essence of the whole matter is that the project of Indianizing the higher ranks of the army remains, in existing circumstances, in an experimental stage, and its consequences and implications therefore cannot be fully foreseen. This alone is quite sufficient to explain the recent hesitation on the part of the authorities to commit themselves to estab-

lishing an Indian "Sandhurst" in accordance with the recommendations of the Skeen Committee, since until a sufficiency of suitable entrants was assured, they were uncertain how far the extra expenditure entailed would be justified; and their decision, despite its admitted unpopularity in this country, to proceed with the "Eight Units" Scheme, whose abolition the Committee had advised, is similarly accounted for, since by this means alone could selected portions of the army be completely Indianized and their comparative efficiency tested within a reasonable time.*

The arguments put forward by the supporters of the Government's recruiting system must now be briefly described. They can be summarized under two heads. Firstly, it is contended that, even supposing there exists, throughout large tracts of the country, particularly in the Centre and South, an immense reserve of potential military aptitude of which no use has hitherto been made, there still remains ample justification for the methods the authorities have adopted. For until very recent times, responsible Indian leaders manifested little or no desire that the recruiting policy should be specifically directed towards the creation of an Indian national army; moreover, it was not in any way the intention of the Government to undertake so complex and expensive a task. This being so, the natural and proper course for the authorities to adopt was merely to obtain, as economically and simply as they could, such troops as were required for defending the country from those parts of it where the inhabitants were known to be capable and desirous of military service; and since recruits of excellent character and physique were always forthcoming in plenty from among the traditionally military peoples of the North and North-West,—that is to say from the region in which India is most exposed to external aggression,—there was no reason whatever why the Government should embark upon experimental schemes which would certainly be costly, and might also be dangerous, for securing more troops than they actually did from elsewhere. The existing system thus sufficed,—and still suffices,—for the purely military purposes for which it was devised; the troops in service were capable, of excellent physique, courageous, and their morale was sound; and to have decided to enlist fewer

* Following on the deliberations of the Round Table Conference of 1930-31, a more extensive scheme of Indianization was worked out in the early part of the year and announced in May.

recruits of this type, and to work in, among the remainder, units composed of men differing profoundly from them in race, language, and tradition, would have added innumerable complexities to the already difficult problem of defence, for which there was not the slightest practical necessity. Moreover,—and this brings us to the second point in the argument,—the authorities have always been of opinion that the variations in the amount of natural military aptitude possessed by the diverse peoples of India are in fact very much greater than the majority of nationalist politicians are wont at the moment to assert; and many impartial observers would contend that recollection of the course of Indian history prior to the establishment of the British *Raj*,—as well as mere personal observation of the characteristics of the peoples concerned,—is sufficient to substantiate this view. The fact also is recalled that during the emergency of 1914-18, when there were the strongest possible reasons for enlisting men from even the most unlikely regions, and when an active recruiting campaign was being conducted throughout the land, the troops obtained from the traditionally unmilitary Provinces were numerically negligible in comparison with those who came forward in the North and North-West,—and some of them, moreover; proved far from satisfactory. In general, therefore, it is contended that, since certain races among the inhabitants of India are entitled to be considered among the most formidable fighting forces in the whole world, while others are rendered both by physique and tradition almost incapable of resisting military aggression of any kind,—and since, in addition, the populace is still acutely divided by racial, linguistic, and religious differences,—the creation of anything which might be considered a genuine national army in India must remain for many years impracticable. In consequence it is urged that such experiments as it may be now considered desirable to undertake in this direction should be embarked upon and conducted with great caution. For were the course of events in India during the next few decades to be such as to bring about the collapse of the existing administration, or even were drastic measures for recruiting troops of new types, or for Indianising the commissioned ranks of the Army, to be undertaken out of impatience and ignorance, a situation might well arise in which discipline could no longer operate, and the unmilitary inhabitants of the country would find their lives and property at the mercy of armed and disorderly warriors

who acknowledged no natural or political kinship with them. This possibility leads us to consider a question which, from the Government point of view, has not hitherto been taken up during the course of our discussion,—namely, whether the number of British troops at present in India is not excessive. Supporters of the military authorities would urge that a country so profoundly divided within itself as India still is, ought on principle to have within her borders some such impartial co-ordinating force as the British Army provides; and that in relation to the country's total population the actual establishment maintained cannot reasonably be considered excessive, since as a rule it does not amount to more than 1 British soldier for every 6,000 inhabitants. In times of internal disturbance it is a generally admitted fact that British troops prove of the greatest assistance to those responsible for the preservation of life and property, since the conflicting parties recognize that there are no reasons whatever why forces imported from without should tend to favour either of them; in consequence, it has become increasingly the custom, when serious communal disorders take place such as the country has been afflicted with in recent years, that the British troops, rather than units from the Indian Army, should be called in to deal with them.

As regards the Territorial Force, there is very wide realization, on the part of the supporters as well as the opponents of the Government, of the important part this organization should play in fostering the desire for national service in the minds of the people, and providing a focus for activities which might otherwise be diverted into unsatisfactory courses. At the same time it is pointed out that the critics of the authorities are liable to overlook the essential fact that, from its very nature, the Force is neither intended nor able to act as a substitute for the Regular Army, and that it would therefore be extremely difficult, either on grounds of principle or expediency, to justify a lavish increase in the expenditure upon it at a time when the cry is all for a reduction in the cost of the Regular Army,—and when in actual fact it has been lowered by approximately 19 per cent. during the last 9 years.

Having now discussed the question of Defence, both from the diplomatic and military points of view, we are in a position to consider India's relations with her peoples overseas. This subject,—despite the fact that the number of Indians settled abroad amounts to less than 1 per cent. of the home population,—has assumed an

importance during the last quarter of a century which could scarcely be over-estimated, owing to the exceptional difficulty and seriousness of the racial problems to which it has given rise.

Travel outside India is discouraged by orthodox Hinduism, and before the Thirties of last century there seems to have been no appreciable movement of Indians abroad except to such closely adjacent regions as Ceylon, Malaya, and the East Indies. But the abolition of slavery within the British Empire in 1834 created an extensive demand, during the next seventy years or so, for the employment of indentured Indian labour in such widely separated parts of the world as Mauritius, Fiji, the West Indies, and Natal, —while at the same time the existing Indian population in Ceylon and Malaya was substantially reinforced by the immigration of workmen recruited in various other ways. These movements were naturally followed,—as soon as the various communities of Indian labourers abroad had become sufficiently large and permanent,—by a gradual influx of Indian traders, artisans, clerks, and professional men, who were drawn by the possibility of serving the interests of the original immigrants. In consequence it is altogether incorrect to suppose,—as is still sometimes done,—that the settlements of Indians in the countries which imported large quantities of indentured Indian labour during the last century consist solely of uneducated "coolies" and members of the lower classes and castes. Moreover a quite considerable amount of spontaneous Indian emigration has occurred to other regions,—particularly East Africa,—where little or no indentured labour was ever introduced. In addition, it should be borne in mind that the whole system of indenture was abolished in 1917, and that under the Emigration Act of 1922, emigration of unskilled Indian workers was prohibited except to such countries and on such terms and conditions as might be specified by the Governor-General in Council, and it was provided that any notification made by the Governor-General under the Act must be approved by both Chambers of the Legislature; moreover a standing Emigration Committee, composed of twelve members of the Legislature, is appointed every year to advise the Government on all major questions that arise. Thus the authorities can now exercise effective control over organized emigration of unskilled Indian labourers, and can ensure on the one hand that the emigrants shall not be of unsuitable type, and on the other that they shall not be

despatched to regions in which arrangements for their reception and treatment are inadequate.

The actual number of Indians at present settled abroad is about 2,406,000 of whom 800,000 are in Ceylon, 628,000 in Malaya, 281,000 in Mauritius, 279,000 in British Guiana, Trinidad, and Jamaica, 165,000 in South Africa, 73,000 in Fiji, and 69,000 in East Africa,—the total for the British Empire as a whole being 2,305,000. Thus it will be realized that the problems that have arisen as a result of Indian emigration have hitherto been almost entirely a matter of inter-Imperial, rather than international concern, since only about 100,000 Indians are permanently resident in lands not subject to the British Crown.

Unfortunately the increase in the habit of travel amongst Indians of the upper and educated classes, and in the tendency on the part of a considerable number of Indian merchants and professional men actually to take up their abode in foreign countries, occurred at a time when the problems arising out of racial differences were causing an increasing amount of tension throughout the world; and in consequence the intelligent and cultivated Indian, who was proud both of the civilization and achievements of his own countrymen, and of the fact that he was a member of the mightiest Empire in the whole world,—within whose sway were included peoples of all kinds and creeds, and whose general policy was obviously guided to a large extent by an impartial desire for their welfare and advancement,—began first to come into contact with Englishmen beyond the confines of his own country at a period when he was liable to find himself treated by the less imaginative among them as an outsider and an inferior. In recent years there seem to have been some indications that this intolerance is on the wane, but it has already had grave and far-reaching repercussions, and caused serious disillusion and resentment amongst such non-European subjects of the British Crown as might naturally expect, owing to their own high standards of civilization, to be placed on an equal footing with Europeans. The gravity of the problems raised by this state of affairs, from the point of view of the future solidarity of the Empire, have received increasing attention of late, as for instance in the resolution of the Imperial Conference of 1921, which recommended that the rights of Indians to equality of citizenship should be recognized; and the improvements which have consequently been effected in the status

and circumstances of Indians abroad are, as we shall shortly see, substantial. Nevertheless it cannot be denied that there still exist considerable discrepancies between the ideals of fellowship and justice, upon whose fulfilment the natural coherence of the Empire must ultimately depend, and the treatment actually meted out to Indians in some parts of it.

Apart from the psychological aspect of the problem, which is really the most fundamental and difficult of all, the practical disadvantages from which Indians still suffer in British territory include restrictions or unreasonable conditions affecting the right to immigrate, or to obtain and retain domicile, exclusion from the franchise,—or alternatively inadequate representation upon Legislative and Municipal bodies and the absence of a common electoral roll,—denial of the right to hold land, to enjoy trading facilities, and to escape from compulsory segregation, and the non-payment of a minimum wage proportionate to the cost of living. These disabilities of course by no means apply throughout the whole Empire. In British Guiana, Trinidad, and Jamaica, Indians have exactly the same status as any other British citizens; in Ceylon and Mauritius also, under their present constitutions, there is no discrimination against Indians on the ground of race. So far as other Crown Colonies or Mandated Territories are concerned, however, racial problems of some gravity have arisen in Fiji, and also in East Africa,—where in Kenya Colony in particular the conflicts between the interests or aspirations of Indian emigrants and those of other settlers have been pronounced. But perhaps the most delicate and difficult of all the negotiations which the Government of India has had to undertake on behalf of its peoples overseas have been those with the Government of South Africa. The self-governing Dominions, of course, are themselves fully responsible for the manner in which Indians within their confines are treated, whereas the Crown Colonies, and other units of the Empire, are not; and the Reciprocity Resolution passed at the Imperial War Conference in 1918 affirmed the rights of each community of the British Commonwealth to control, by restrictions upon immigration, the composition of its own population. But although responsible Indians recognise in the abstract the fact that if the self-governing Dominions desire to exclude Indian immigrants they are entitled to do so, and that reasonable complaint can only be raised concerning the exclusion of Indians from the

Crown Colonies, it has nevertheless not been easy for them to consider the actual consequences of this discrimination dispassionately when they reflected upon the ideals for which the British Empire is supposed to stand; and their general irritation at the grievances of their fellow-countrymen across the seas is apt to vent itself in criticism not only of Great Britain but of the Government of India in its present form. Thus the practical disabilities to which Indian emigrants have found themselves subjected have not only raised questions of principle which are of vital importance to the future of the whole Empire, and which have taken a prominant place amongst the topics which successive Imperial Conferences since the war have been forced to consider, but have also exercised a profoundly disturbing influence over the currents of Indian internal politics, whose effects can scarcely be expected to subside for some time, despite the sympathetic consideration which the problem has recently been receiving.

Let us now indicate in more detail the progress of events during recent years in those territories in which Indians have complained of treatment incompatible alike with the dignity of India as a part of the Empire, and with their own personal status as subjects of the British Crown. Recently the circumstances of Indians in South Africa, and the relations between the Union Government and the Government of India, have shown an improvement; but during the period immediately after the War inter-Imperial problems of unusual gravity were raised as a result of a series of legislative proposals that were put forward concerning the treatment of Asiatics within the Union. In 1921, a Commission appointed by the Union Government recommended the retention of a law prohibiting the ownership of land by Asiatics in the Transvaal, and the withdrawal of the right of acquiring and owning land in the uplands of Natal. In 1924 the Class Areas Bill was introduced, which provided for the compulsory segregation of Asiatics in urban areas,—though fortunately this measure lapsed. In the same year, however, the Governor-General assented to the Natal Boroughs Ordinance, which prevented the further enrolment of Indians as burgesses. And in 1925 it was proposed to amend the Mines and Works Act in such way as to refuse the grant of certificates of proficiency to Asiatics in certain occupations. Thus the disabilities from which Indians suffered in South Africa, and which, since the time of Mr. Gandhi's first Passive

Resistance Campaign in Natal in pre-war days, had always excited peculiar interest, seemed likely to be increased; and as soon as the full implications of this series of discriminatory proposals came to be understood, the resentment aroused throughout this country was widespread and intense. Attention was moreover drawn to the fact that of all the delegates who had attended the Imperial Conference of 1921, those from South Africa alone had dissented from the Resolution to which we have already referred, which admitted, on principle, the claim of Indians settled within territories subject to the British Crown to equality of citizenship. The Government of India accordingly made strenuous representations to the Union Government on the proposed discriminatory legislation against Indians, and in 1925 sent a deputation under the late Sir George Paddison to investigate matters on the spot. A better understanding between the two Governments resulted from the work of this deputation, and after its return to India in May, 1926, the Government of India agreed to the proposal of the Union Government that a Conference on the Indian question should be held in South Africa in the following December; at the same time suggesting that a deputation from the Union should visit India prior to the Conference. This invitation was accepted, and a South African deputation paid a useful visit to India during the early autumn. The Indian delegation for the Conference departed shortly afterwards, and as a result of its negotiations a provisional Agreement was attained at Cape Town, which was later ratified. Both Governments re-affirmed their recognition of the right of the Union Government to use all just and legitimate means for maintaining Western standards of life within its boundaries, and the Union Government recognized that Indians domiciled in South Africa and wishing to conform to Western standards of living should be enabled to do so. Those Indians who wished to leave South Africa were to be assisted by the Union to return to India or emigrate elsewhere, and permission to come back to the Union was to be given to those who so desired, provided they exercised the right within a period of three years, and refunded the value of the assistance they had received. The Union Government further agreed not to proceed with the Areas Reservation and Immigration and Registration (Further Provision) Bill, and suggested that the Government of India should appoint an Agent in South Africa to secure continuous co-operation between the two

Governments. The Government of India for its part recognized its obligation to look after returned emigrants on their arrival in India.

This Agreement was fairly well received in both countries. The Government of India promptly made arrangements for receiving in India such Indians as might decide to return here; and appointed as its first Agent in South Africa, the Right Hon. V. S. Srinivasa Sastri, P.C., C.H., who had been a member of the delegation which had effected the settlement at the Conference. The Union Government on its part was quick to introduce legislation implementing its own undertakings, and in addition extended an amnesty to all Indians who were at that time illegally present in the Union; when Mr. Sastri arrived in South Africa in June 1927, all that remained to be done was to take action under Part III of the Cape Town Agreement, which was concerned with the measures required for the general uplift of the Indian community in the Union. The provisions of this part of the Agreement chiefly affect the province of Natal, where the majority of Indians in South Africa reside, and the Union Government moved the provincial administration to appoint a Commission to enquire into the condition of Indian education in that province, and to suggest means for its improvement. Co-operation with this Commission on the part of the Government of India was provided by the appointment of two educational experts, to assist the Commission on its investigation.

Since the Cape Town Agreement was made, there has undoubtedly been, on the whole, a real and gratifying improvement in the relations between the two Governments, despite the occasional emergence,—as for instance during the year now under review,—of complex racial problems which have caused some tension; and the practical benefits which the Indian community settled in South Africa have obtained as a result of it have been substantial. An example of this occurred in 1927, when a Clause in the measure known as the Liquor Bill, which threatened the livelihood of 3,000 Indians by prohibiting their employment in licensed premises such as hotels, clubs, and breweries, was abandoned owing to the representations made to the Union Government on the subject on behalf of the Government of India; and there have been several other occasions during the last four years when the Indian community might have been subjected to discri-

minatory treatment but for the arrangements made under the Agreement. Much of the credit for this improved state of affairs is due to the first Agent of the Government of India in South Africa,—Mr. Sastri,—whose tact, ability, and honesty of purpose earned for him, at the outset, the confidence both of responsible European opinion and of the majority of his own compatriots; and his work has been successfully continued by his successor, Sir Kurma Venkata Reddi, Kt., who took up the duties of the post after Mr. Sastri's resignation early in 1929.

In our previous Report, we explained in detail the complicated and somewhat unsatisfactory series of events which had led the Union Government to set up a Select Committee of the House of Assembly, to enquire into the operation of the laws relating to the ownership and occupation of immovable property by Asiatics in the Transvaal. This Committee submitted its report on the 13th of May 1930, and embodied its recommendations in a Bill, which, it urged, should be enacted immediately. The Bill was designed to have the following effects. Firstly, it implied the absolute prevention, in future, of the acquisition, directly or indirectly, individually or through joint stock companies, of fixed property by Asiatics in the Transvaal outside areas that might be set apart for them,—a lease of such property for ten years or less being construed as ownership. Secondly, it required the enforcement from the 1st of May 1930, of the restrictive provisions of sections 130 and 131 of the Gold Law of 1908; even townships like Springs which the Supreme Court had held to be outside the purview of the Gold Law, were, in future, to be brought within its scope; and when an area ceased to be proclaimed land, the restrictions as to occupation by Asiatics were to continue. Thirdly, it was intended to empower such local authorities as were authorized to issue certificates of fitness for obtaining trading licenses, not to issue such a certificate to any Asiatic unless they were satisfied that the proposed holder of the trading licence, and the person actually in control of the business, had a lawful title to occupy the premises on which the trade was to be carried on,—the person aggrieved however being entitled to appeal, first, to a magistrate, and subsequently to the Transvaal Provincial Division of the Supreme Court. The first reading of the Bill took place on the day after the Committee's report had been laid on the table of the Assembly,—that is, on the 14th of May, and the second reading was fixed for the 21st;

but in deference to the Government of India's request that more time should be allowed for examining the measure, the Union Government decided that further consideration of it should be postponed until the following Session. Meanwhile the Government of India sought the advice of the Standing Committee on Emigration of the two Houses of the Indian Legislature upon the line which they should adopt in making representations to the Union Government on the subject. It was also arranged that Sir Muhammad Shafi, who had gone to London as one of the delegates of India to the Imperial Conference, should discuss the provisions of the Bill informally with the representatives of the Union there. Apart from this, it was clearly desirable that before the Government of India made final representations to the Union Government on the Bill, the views and wishes of the Indian community in South Africa who were directly affected by the measure should so far as possible be ascertained. Early in October, at an emergency meeting held in Johannesburg, the South African Indian Congress passed a resolution to the effect that the Bill was wholly unacceptable to the Indian community, and urged that the Union Government should not only withdraw it, but also introduce legislation to remove some of the disabilities that the existing law imposed. This resolution was re-affirmed at a subsequent meeting of the Congress held in the end of December. Almost every speaker is reported to have declared that no compromise regarding the Bill was possible, and the delegates at the meeting were said to have stated that, if the Government of India agreed to compromise concerning it, it would do so for itself only, and not for the South African Indian community. It was thus evident that a mere modification of the provisions of the Bill, with the object of safeguarding existing Indian rights, would not meet the wishes of a large section of the people most concerned. The Government of India therefore urged upon the Union Government that consideration of the Bill should be postponed altogether until the Cape Town Agreement comes up for revision in 1932, and it is gratifying to be able to say that this request has been accepted. Arrangements have accordingly been made to hold a conference between representatives of the two Governments in South Africa, at which both subjects may be considered, in January 1932.

Another Bill affecting the position of Indians in South Africa was the Immigration Amendment Bill, which was introduced in

the House of Assembly without previous notice on the 2nd of February, 1931, and shortly afterwards,—it is unsatisfactory to record,—was passed. The provision of the Bill which was of most interest to the Indian community was the one which sought to abolish the permanent right of entering and residing in the Transvaal, possessed by the holder of a Registration Certificate under sections 2 and 11 of the Transvaal Asiatics Registration Act No. 36 of 1908. The Indian community in South Africa took the view that the new Bill deprived them of a definite right which had been acquired as a result of the famous Passive Resistance movement many years ago, and had moreover been guaranteed by British statesmen in pre-Union days. The community maintained that as the Act passed in 1927 to amend the Immigration Act of 1913 did not touch this right, and as the 1927 Act was adopted specifically to give effect to the Cape Town Agreement, the *status quo* could not reasonably be altered until the whole situation had been reviewed at a new Conference. The Government of India was of the opinion that whatever the intention of the Union Legislature might have been, the Act as passed in 1927 gave rise to reasonable belief among Indians who held registration certificates that they were immune from the effects of a loss of domicile. Representations were accordingly made to the Union Government that before the protection given by the Transvaal Registration Certificate was withdrawn, a reasonable period of notice should be given. Unfortunately, however, this suggestion was not accepted by the Minister in charge of the matter, nor did he agree to postpone consideration of the Bill until after the Conference connected with the revision of the Cape Town Agreement had been convened.

In Kenya, some improvements occurred in the relations between the European and Indian settlers after 1923, when His Majesty's Government announced its general policy towards this Colony. It is true that the two problems which had aroused the greatest bitterness, namely the electoral arrangements, and the prohibition of Indian settlement in the Kenya highlands, remained untouched by the announcement; but the Ordinance restricting immigration was not enacted. This concession, although far from satisfying Indian opinion, either in East Africa, or in India, at least did something to ease the situation, which was still further ameliorated when the Indian community abandoned its practice of political

non-co-operation and selected five members for the Legislative Council.

In 1926, however, the Government of Kenya appointed a Commission to make recommendations concerning the establishment or extension of local Government in Nairobi and Mombasa and their environs, and in such other settled areas as might be considered suitable for it. The Commission's report, which was completed in February, 1927, contained a number of recommendations relating to Indians, including proposals involving a decrease in the proportion of Indian representation on the local bodies at Nairobi and Mombasa, and the creation of European elected majorities in these places. This caused much resentment among Indians in the Colony, and resulted in the withdrawal from the Legislative Council of four out of its five Indian members; and the Government of India submitted representations to the Secretary of State for India on the subject. In the matter of un-official representation on the Councils of Nairobi and Mombasa, a Committee consisting of European and Indian political leaders was appointed by the Governor of Kenya, to endeavour to arrive at an agreement upon such clauses of the Local Government Bill as involved a difference of opinion between the European and Indian communities. The amendments proposed as a result of this enquiry were all incorporated in the Ordinance enacted in October, 1928, but the Indian community in Kenya nevertheless decided at that time not to take advantage of the increased representation offered to it on these two municipal bodies until its desires concerning the introduction of a common electoral roll had been to some extent met,—though this decision, as we shall shortly see, has now been modified.

In July 1927 a new and important factor was introduced into the situation by the announcement that His Majesty's Government had authorised the Secretary of State for the Colonies to send to Africa a special Commission to investigate the possibility of securing more effective co-operation between the Governments of the Eastern and Central African Dependencies. Considerable apprehensions were immediately aroused in India concerning the effect which the findings of the Commission might have upon the future status of Indians in these territories, and two officials were accordingly appointed by the Government of India to visit East Africa and make a general survey of the region in relation to Indian interest therein, and to help the resident Indian com-

munity to prepare their evidence for the Commission. Meanwhile arrangements had been proceeding for the constitution of the Commission, and in December 1927 it left England under the chairmanship of Sir Edward Hilton Young. Its report, which was published in January 1929, was carefully examined by the Government of India in consultation with the Standing Emigration Committee of the Indian Legislature and with prominent representatives of all parties in the Legislative Assembly; and the tentative conclusions reached by the Government were communicated to the Secretary of State for India in March 1929.

In the same month the Secretary of State for the Colonies sent out Sir Samuel Wilson, Under-Secretary of State, to East Africa to discuss the recommendations of the Hilton Young Commission for the closer union of Kenya, Tanganyika and Uganda, with the Governments concerned, and also with any bodies or individuals representing the various interests and communities affected; and the Government of India deputed Mr. Sastri to go to East Africa to help the local Indian communities to state their views on the matters at issue. In September 1929, a month after the completion of Mr. Sastri's report,—whose main conclusions were enumerated in our previous issue,—an Indian delegation from East Africa came to place certain recommendations before the Government of India, which were considered at a conference of officials and members of the Legislature and the Standing Emigration Committee towards the end of the month and communicated to the Secretary of State. A few weeks afterwards, Sir Samuel Wilson's report on his enquiries in East Africa was published; and another meeting of the Standing Emigration Committee was convened to consider his proposals, as a result of which a further communication was addressed to His Majesty's Government by the Government of India.

The considered proposals of His Majesty's Government on the reports of the Hilton Young Commission and of Sir Samuel Wilson were published simultaneously, in England, East Africa and India, during the month of June 1930, in the form of two White Papers entitled "*Statement of the Conclusions of His Majesty's Government in the United Kingdom as regards Closer Union in East Africa*" and "*Memorandum on Native Policy in East Africa*". In the foreword to the former Paper it was announced that in order that the proposals should receive the fullest consideration, they

would be submitted to a Joint Committee which the two Houses of Parliament would be invited to appoint; and this Committee was set up in November, 1930. Meanwhile His Majesty's Government had invited the opinion of the Government of India on the Scheme of Closer Union set out in the White Paper, in so far as it affected the Indian population in that territory, and suggested that the conclusions reached should be expressed in a self-contained document which could be laid before the Joint Select Committee; and a Despatch on these lines was accordingly sent to the Secretary of State for India in November. In this document the Government of India, although lending no support to the Scheme of Closer Union, raised no objection to it, provided certain safeguards were definitely prescribed in the interests of the Indian community; the conclusion of His Majesty's Government that the constitution of the Legislative Council of Kenya should be left substantially unchanged, and that the unofficial majority should be retained, was welcomed; the declaration previously made in favour of a common electoral roll was reiterated; and it was urged that the enquiry proposed by the High Commissioner should be undertaken as soon as possible, in order that the fruition of the hopes which the declaration of His Majesty's Government had raised in the minds of the Indian community might not be delayed. Permission was also sought for facilities whereby the Government of India's case might be put forward in London by a representative, and when this request was granted, Mr. Sastri was selected as spokesman and sailed for England on the 18th of April 1931.

Another important matter relating to Kenya which engaged the attention of the Government of India during the year under review, was the Privy Council judgment in the case in which Mr. Abdul Husain Kaderbhai, an Indian citizen of Mombasa, sought reversal of the decision made by the Court of Appeal in East Africa concerning the restrictive condition of an Indian's right of residence, which had been imposed by the Commissioner for Local Government, Lands, and Settlement in 1928, in respect of certain plots in Mombasa that were to be sold by auction. The Commissioner sought reversal of the decision of the same Court of Appeal in respect of a further condition restricting the sale of these plots to Europeans which that Court had decided was *ultra vires*. The decision of the Privy Council was in favour of the Commissioner for Local Government on both points, that is, both

as regards ownership, and residence and occupation. When this verdict became known, however, it was represented to the Government of India that the judgment of the Privy Council supporting the right of the Commissioner to impose disabilities even as regards ownership, is based upon what is a wrong assumption of fact, since there have been instances in the past of Indian bids having been accepted for plots in what are exclusive European residential areas. The Secretary of State for India was accordingly addressed on the matter, and advantage was also taken of Mr. Sastri's presence in England to ask him to discuss the question with the Indian delegates from East Africa. Further action will depend on Mr. Sastri's report.

We have already referred to the fact that in 1928 the Indian community in Kenya reverted to its previous practice of refusing to participate in legislative and municipal elections on the basis of communal electorates. During the year under review, however, it abandoned this policy and again began to take an active part in the public affairs of the Colony by accepting nomination to municipal bodies,—though only on the understanding that its claim for a common electoral roll, to which it still adhered unflinchingly, would not thereby be endangered.

Some years ago, we mentioned that Indians in Western Australia and Queensland were subject to certain disabilities, of which exclusion from the State Franchise was perhaps the most important. Attention was drawn to this fact by Mr. Sastri when he visited Australia in 1922; and representations on the subject have also been made by other visitors from India such as Mr. Rangachariar, Sir Darcy Lindsay, and Mr. Shanmukham Chetty. In 1930 Sir Muhammad Shafi, while present in London as a delegate of India at the Imperial Conference, was asked to hold informal conversations with the representatives from Australia in regard to the condition of Indians settled in that country; and it is satisfactory to record that as a result of these discussions the Government of Queensland has now amended its electoral law so as to provide for the enfranchisement of British Indians resident in that State. This action on its part is warmly welcomed as a friendly gesture towards a partner in the British Commonwealth of Nations, and it is hoped that its example will be followed by the Government of Western Australia.

Turning now to events nearer home, we must devote some space this year to considering the circumstances of the Indian labourers employed on the rubber and tea estates of Malaya and Ceylon, who have suffered considerably from the world-wide slump in commodity prices. In 1927 the average price of rubber per lb. was 1*s*. $6\frac{3}{8}$*d*.; in 1928 it fell to $10\frac{8}{11}$ *d*., and in 1929 to $10\frac{1}{8}$*d*.; by November 1930 it had slumped to $4\frac{1}{7}$*d*., and the price in February 1931 was $3\frac{3}{4}$*d*. It was inevitable that this collapse in values should react unfavourably upon the labourers employed in the industry. In Ceylon, the minimum daily wages which came into force on the 1st of January, 1929, were at first left unaltered, and attempts were made to meet the situation by obtaining the labourers' consent to a reduction in the length of time for which work was offered to them. The Government of India was kept informed regularly by its resident Agent of the working of this expedient, and was satisfied that in the circumstances Indian labourers in Ceylon were adequately safeguarded by the introduction of a special repatriation scheme, whereby any Indian labourer who desired to return to India with his dependents,—owing to actual or threatened unemployment, or to any material reduction in his earnings,—was enabled to do so at the expense of the Indian Immigration Fund. A labourer who was unwilling to be employed for less than six days in the week, which is the statutory period for which work may be demanded, and whose monthly earnings consequently fell below the ordinary level, was entitled to avail himself of these facilities. Moreover, to prevent a glut of labour in Ceylon, all fresh recruitment for rubber estates was stopped, and the Controller of Indian Immigrant Labour endeavoured, whenever necessary, to divert the existing labour force from rubber to tea estates. Proposals to reduce the standard wages fixed for Indian labourers were however received towards the end of the year, owing to the serious fall in the price of rice. When the standard rates were fixed, employers were required to issue rice to labourers at a cost not exceeding Rs. 6/40 a bushel, which was deducted from the labourers' monthly earnings; but when the price of this commodity declined to less than Rs. 4 in low-country Districts, and to a little below Rs. 5 in up-country Districts, proposals were put forward that rice should be issued at not more than Rs. 4/80 per bushel, and that the minimum wages should be reduced by 5, 4,

and 3 cents for men, women and children respectively. At the end of the period under review no decisions had been reached on these proposals, which were still under consideration.

In Malaya, the local Governments proposed a reduction of 20 per cent. in the standard wages of Indian labourers during the year, and the Government of India felt that they had no reasonable ground for objecting to this, since salaries, agency fees, Director's fees, and so forth had also been reduced, and all factors engaged in the production of rubber were bearing their proportionate share in the sacrifice. They however represented to the Malayan Governments that all Indian labourers who wished to be repatriated, either because they were thrown out of employment, or because they were unwilling to work on lower wages than the standard rates, should be repatriated free of cost; and as a result of this suggestion, nearly 73,000 Indians obtained free repatriation between August and December 1930. All recruitment of labour from India to Malaya, moreover, was stopped,—in the same way as it was in respect of rubber estates to Ceylon,—and only such persons are now assisted to emigrate to Malaya as have left their families there. Another proposal put forward by the Malayan Governments during the year was that the wages of unskilled Indian labourers employed in Government Departments such as the Railways and the Public Works Department should be reduced by 20 per cent., owing to the acute economic depression that prevailed; and the Government of India did not feel they could oppose this proposal either, particularly when the authorities concerned made it clear that reduction was to be effected only as a temporary measure to meet an exceptional emergency. The proposal was accordingly agreed to subject to the same conditions regarding repatriation as had been applied in respect of estate labourers.

We must now revert to another question which has recently arisen in connection with the position of emigrant Indians in Ceylon,—namely their right to the franchise. Brief reference, it will be recollected, was made to this matter in our last Report. Under the old constitution of Ceylon, apart from certain preliminary requirements such as British nationality, male sex, a minimum age qualification of 21 years, and the absence of mental disability or criminal antecedents, the essential qualifications for franchise were, firstly, ability to read and write in English, Sinhalese or Tamil; secondly, residence for six months immediately

prior to the commencement of the preparation of the electoral register; and thirdly, possession of an annual income of not less than Rs. 600, or ownership of immovable property worth not less than Rs. 1,500, or occupation as owner or tenant of a house or shop whose annual value was not less than Rs. 400 if situated within urban areas or Rs. 200 if situated elsewhere. The Donoughmore Commission on constitutional reforms in Ceylon, which published its report in July 1928, recommended, *inter alia*, firstly, that the franchise should be extended to females of not less than 30 years of age, and secondly, that the conditions based on literacy, property, or income should cease to apply, and that only those persons should be excluded from the franchise who had not been resident in the island for a period of five years, and who had failed to reside for 6 out of the 18 months immediately prior to the time when work on the voters' register for an electoral district had first been started. There was for some time much controversy in the Ceylon Legislative Council and elsewhere over these recommendations. Finally, the Legislative Council passed a resolution accepting the recommendations of the Commission, subject to the condition that, in the case of females as well as of males, the minimum age for qualification as a voter should be 21 and not 30, and that every voter should be able to read and write English, Sinhalese or Tamil,—that is to say, it superimposed the condition of literacy on the only effective condition the Commission had recommended, namely that of residence. The recommendations of H. E. the Governor of Ceylon, however, which were published in October 1929, differed both from those of the Donoughmore Commission and of the Legislative Council. Instead of "residence", which was to be the standard test under the Donoughmore Scheme, "domicile" was now made the criterion. As for the undomiciled, two alternatives were given, namely, compliance with the literacy *cum* income or property qualifications prescribed under the old constitution, or failing that, the production of a "certificate of permanent settlement" granted by some duly appointed officer. The conditions entitling an applicant to obtain such a certificate were threefold, namely, the production of satisfactory evidence of five years' residence, as contemplated and defined by the Donoughmore Commission; the making of a duly attested declaration to the effect that the applicant was permanently settled in the island, or was residing in it with intent to settle; and the making

of another declaration that the applicant would renounce any claim to special protection by any Government other than the Government of Ceylon, or to any statutory rights, privileges or exemptions to which residents of all races and communities were not entitled. The Governor's recommendations caused considerable uneasiness in the minds of Indians resident in the Colony, and public opinion in India was also stirred, as it was feared that the condition of renunciation referred to above, was calculated to deprive the Indian labourer, who claimed a vote, of such hard-won privileges as the right to the minimum wage and immunity from arrest for debt. A resolution on the subject was moved by a non-official member in the Indian Legislative Assembly in February 1930, and all parties combined to express their apprehensions regarding the circumstances of Indians in Ceylon were such a scheme to be enforced; representations were also made on the subject in London. In June 1930 the decision of His Majesty's Government on the question was announced. While the main outlines of the Governor's scheme were agreed to, certain important modifications were made. The necessity for a formal act of renunciation by an individual applying for a certificate of permanent settlement was removed. His Majesty's Government also made it clear that it was not intended that any of the laws of Ceylon affecting the position or privileges of Indians in the island should be repealed or amended to their detriment, nor that the powers and functions of the Agent of the Government of India in Ceylon should be abrogated or reduced. The fact was also reiterated that no Bill diminishing or abrogating any of the existing rights or privileges of Indian labourers in Ceylon could receive the Governor's assent, unless he had previously obtained the sanction of the Secretary of State for the Colonies. At the same time an assurance was given that the holder of a certificate of permanent settlement who had declared his intention of settling in Ceylon, would not be subjected to any penalty other than forfeiture of franchise if he paid a visit to India which he intended to be of short duration but which in fact exceeded the prescribed limit. This decision was on the whole received with satisfaction by the Indian community in Ceylon. The registration of voters under the new Constitution took place in the third quarter of 1930 and Indians registered themselves, as far as possible, on the basis of domicile, instead of resorting to the comparatively cumbrous procedure of obtaining certificates of permanent settle-

ment. An Indian was regarded as domiciled if he could produce proof of five years' residence in Ceylon and intended to reside there for an indefinite period. The results of the elections were not known before the period under review came to a close.

Apart from the events we have now discussed, no developments of material importance occurred in connection with Indian emigrants during the year, and their position remained approximately as we have described it in previous issues of this Report.

CHAPTER II.

Politics and Administration.

To write the Chapter on political and administrative problems in these annual Reports is always an awkward task. Throughout, the author has the uncomfortable knowledge that his account is official, and that although the events he is dealing with have aroused intense interest and often passionate controversy, he must nevertheless select and treat them in the discreet, unemotional manner appropriate to a Government publication. On this particular occasion, when so much of what occurred within the tract of time allotted to him was unusual and exciting, it will be particularly difficult either to recognize the exact boundaries within which his narrative should be confined, or, having done so, to resist the temptation of jumping over them now and then in moments of enthusiasm. In addition, he is conscious of labouring under another serious disadvantage. For while movements in Indian politics nowadays are very swift and far-reaching, his account of the course they took during the twelve months assigned to him for description must remain unread until the whole of his Report is complete; and to collect and assimilate the material required for his other Chapters and obtain the necessary approval for the final result takes many months. Thus by the time these yearly volumes are published, the subjects dealt with in the political Chapters seem as a rule to have lost much of their contemporary interest without yet being remote enough to be considered purely historical. These difficulties are inevitable, and their effects will be apparent throughout the following pages. But on the other hand there are, this year, some factors working in the author's favour. One is that many of the incidents he will be describing, distant though they will be by the time these words are printed, were so exceptional and dramatic that much of their freshness must still survive; and another, that the period with which he is concerned constitutes a peculiarly convenient chronological unit, compact and complete in itself, without ragged edges.

The dates between which this narrative will run are the 1st of April 1930, and the 31st of March 1931, and they coincide, therefore, almost exactly with the beginning and end of the Civil

Disobedience Movement. It was five days after the former date that Mr. Gandhi, having concluded his ceremonial march from Ahmedabad, formally inaugurated the Movement by breaking the Salt Law on Dandi beach, and precisely on the latter date that the Irwin-Gandhi Agreement, whereby the Movement had been terminated twenty-six days previously, was definitely ratified by the Congress at Karachi. Other events of political importance within the twelve months, therefore,—whether exceptional, such as the first Round Table Conference in London, or normal, such as the sessions of the Central Legislature,—will emerge from our story as episodes, and the main theme throughout must be the campaign of defiance of the Government organized by the Congress.

The origin of this campaign we do not propose to discuss here at length, since it was dealt with in our previous Report. It will be sufficient to remind the reader of the outstanding facts. On the 31st of October 1929, within a few days of his return from a visit to England, Lord Irwin was authorized by His Majesty's Government to make an important announcement with regard to India's constitutional future, which, it was hoped, would disperse much of the distrust and confusion concerning Great Britain's intentions that had been growing during previous years, and had been noticeably aggravated by the fact that the Statutory Commission contained no Indian members. The essence of the announcement was contained in the following two points: firstly, it was formally recognized that the natural goal of Indian political aspirations is the attainment of Dominion Status; and secondly, it was provided that, after the report of the Statutory Commission was published, and before any new Government of India Bill was put before the British Parliament for consideration, Indian political leaders should be invited to express whatever views they might hold concerning the future constitution of their country at a Round Table Conference in London. At first, this announcement was auspiciously received, and a manifesto commenting cautiously but favourably upon it was signed two days later by representatives of practically every section of Indian political opinion, including Congress leaders and others who had refused to co-operate with the Statutory Commission. But as the month of November advanced there were signs that a considerable proportion of Congressmen considered the offer the Viceroy had been authorised to make unsatisfactory. Some, no doubt, believed it to be intrinsically inadequate; others may have suspected

it of being a political trap. Whatever the reasons, their opposition grew; and when, on the 23rd of December, Mr. Gandhi and Pandit Motilal Nehru,—together with some other political leaders,—went to discuss certain aspects of the announcement with the Viceroy in Delhi, they made demands which would have entailed a radical alteration in its original implications, and which they must have known could not be conceded. The conversations were therefore terminated, and the two Congress leaders forthwith repaired to Lahore, where the annual meeting of the Congress was about to take place. There, on the 31st of December, the fateful resolutions was passed which declared that the goal of Congress is "the attainment of complete independence for India" and that consequently "nothing is to be gained in existing circumstances by the Congress being represented at the proposed Round Table Conference"; it also authorised the All-India Congress Committee to initiate a campaign of Civil Disobedience whenever it thought fit.

During the next two months, however, nothing very noteworthy occurred. Preparations for the campaign were undoubtedly in progress, though on the other hand there were signs that the Congress leaders were far from unanimous concerning the wisdom of inaugurating it. In the end, however, after a complicated series of discussions which it is unnecessary for us to describe, Mr. Gandhi,—who had been armed with dictatorial powers by the Congress,—finally decided to set forth from his *ashram* in Ahmedabad, accompanied by his immediate followers, on the 12th of March, and to walk to the sea shore and initiate the campaign there by public defiance of the Salt Laws. The progress of this ceremonial procession was extensively reported in the press, and although the enthusiasm displayed concerning it in the villages through which it passed was apparently less than Mr. Gandhi had anticipated, it undoubtedly succeeded in arousing a good deal of excitement and speculation among the general public. On the 5th of April Mr. Gandhi reached Dandi beach, and on the following day, when salt had been illegally prepared, the Civil Disobedience Movement was considered to have begun.

At this stage, before we actually embark on our analysis of the year's events, it may assist readers if we indicate how this Chapter will be arranged. We propose to subdivide it into nine main sections. The first will describe the incidents and administrative

problems to which the Civil Disobedience Movement gave rise between the 6th of April and the 7th of July, and the second will describe some of the political reactions to them. We shall then proceed, in the third section, to deal with the publication of the report of the Statutory Commission, the Simla session of the Central Legislature, and various developments associated with these two events. In the fourth section our account of the progress of the Civil Disobedience Movement will be resumed and carried on to the 12th of November. The fifth will briefly discuss the proceedings of the Round Table Conference in London and the reactions to it in India, and the sixth will trace the course of the Civil Disobedience Movement between the 12th of November and the 5th of March, when the Irwin-Gandhi Agreement was made. In the seventh and eighth respectively we shall deal with the business transacted during the Delhi session of the Legislature, and the administrative problems that arose during the three weeks or so after the Irwin-Gandhi Agreement was concluded. And in the ninth we shall describe the peculiar events which took place in the North-West Frontier Province and Burma during the year. As regards the Frontier Province, it will, of course, be impossible to confine references to the disturbances that occurred there entirely to the ninth section of our Chapter, since they had a fairly close resemblance to those which took place in other parts of the country; but as the military operations in the Frontier Province have already been described separately in Chapter I, it seems more convenient to maintain the distinction as far as we can here.

Perhaps the most conspicuous feature of the first phase of the Civil Disobedience Movement,—that is to say the period between the 6th of April and the 7th of July,—was the number of riots and serious disturbances that occurred, especially in the towns. In no year, of course, is India immune from internal disorders of some kind, but the state of affairs during April, May, and June 1930 was altogether exceptional. Moreover, such outbreaks of violence as this country has suffered in recent times have been due mainly to communal hostility or labour disputes, and neither of these causes,—as we shall indicate in a moment,—was responsible for much trouble during the earlier part of 1930-31. Unquestionably, the vast majority of the disorders were attributable to the general excitement created by the Civil Disobedience Movement or to some special incident connected with it. In the space at our disposal

here we cannot attempt to describe these riots individually, but the following list, which is not an exhaustive one, will give some indication of the extent and nature of the difficulties the authorities had to contend with. On the 11th of April there were disturbances in Bombay and Calcutta; on the 14th, a riot in Belgaum (Bombay); on the 15th, a serious riot in Calcutta; on the 16th, another serious riot in Karachi, and a disturbance in Poona. On the 18th occurred the startling attack by terrorists on the Armouries in Chittagong, which will be described in Chapter IX. On the 20th there was a disturbance in Patna; on the 22nd a riot in Madras; and the 23rd was the date of the very serious riots in Peshawar which have already been referred to in Chapter I. On the 27th a second riot occurred in Madras; on the 2nd of May there was a disturbance in Amritsar; and on the 6th, serious riots in Delhi and Calcutta, and disturbances in Bombay, Ranaghat (Bengal), and Jullunder (Punjab). On the 8th, rioting of so exceptionally serious a kind occurred in Sholapur that martial law had to be proclaimed. On the 15th/17th there were serious riots in Mymensingh (Bengal); on the 17th, a disturbance in the Jhelum District; on the 24th, disturbances in Calcutta, Karachi, and Multan (Punjab); on the 25th, a riot near Mardan (Frontier Province) in which a police officer was killed, and disturbances in Delhi and Rawalpindi; and on the 25th/26th a serious riot in Lucknow. Bombay was the scene of a riot on the 26th/27th; on the 29th there was a disturbance in Calcutta, and on the 31st a second riot in Peshawar. In June, a disturbance occurred in Dera Ismail Khan (Frontier Province) and at Cholinganallur (Madras) on the 2nd; and serious riots occurred in and around Midnapore (Bengal) on the 3rd/7th. Bombay suffered further disturbances on the 5th, 12th, 16th, and 21st. There were riots near Kaira (Bombay) and in Vellore (Madras) on the 8th; and disturbances in Amritsar on the 9th, in Panchla (Bengal) on the 10th, in Kherai (Bengal) on the 13th, in Calcutta on the 21st, and in Tangail (Bengal) on the 25th. On the 26th, a riot occurred in Ellore (Madras), and on the 30th a disturbance near Bhagalpur (Bengal). During the first week in July there were disturbances in Jessore (Bengal) on the 1st, in Bombay on the 3rd, and in Poona on the 6th. A riot took place near Balasore (Bengal) on the 1st/2nd. Practically every one of these disorders occurred as a result of some incident connected with the Civil Disobedience Movement. There were also some serious affrays resulting from

communal hostility or labour disputes. Among the former may be mentioned the riots in Digboi (Assam) on the 9th of May, near Muttra (United Provinces) on the 30th, and in Dabkali (Bombay) on the 9th of June; and the very savage fighting which broke out in Dacca on the 24th of May and continued sporadically for the next ten days. Among the graver disturbances arising out of industrial disputes was the carters' riot in Calcutta on the 1st of April, the riot in Bombay five days later in connection with the strike on the Great Indian Peninsula Railway, and the extraordinary outbreak of mob violence in Rangoon on the 26th/27th of May, as a result of rivalry between Burman and Indian dock-labourers, which will be described in detail in Chapter IX. In addition to all this, several outrages occurred which were directly attributable to terrorists, and also a number of minor bomb-explosions and other incidents which demonstrated how large a proportion of the population was now desirous of imitating terrorist methods. Reference has already been made to the extraordinary outrage at Chittagong on the 18th of April. Among the other incidents during this month were two bomb explosions in Bombay on the 12th and a murderous attack on the police at Feni railway station (Bengal) on the 22nd. On the 3rd of May there was an explosion in Kirkee (Bombay); on the 16th, a bomb was thrown at the police in Howrah, and similar outrages occurred in Madras and in Multan on the 19th; on the 24th there was a bomb explosion in Amritsar, and on the 24th and 27th respectively two trains were derailed, the one between Maitha and Bhanpur on the East Indian Railway, and the other near Cawnpore. In June, on the 4th, there was a bomb explosion in Lahore, another in the Chenab Club, Lyallpur, on the 6th, and yet another at Barisal (Bengal) on the 18th. On the 19th, a series of carefully prepared bomb explosions occurred in six towns in the Punjab, namely Amritsar, Gujranwala, Lahore, Lyallpur, Rawalpindi, and Sheikhupura. An explosion occurred in New Delhi on the 21st, on the 2nd of July there was an attempt to derail the Calcutta mail near Peshawar, and a bomb burst in Old Delhi on the 4th.

From this deplorable catalogue of disorders and outrages can be derived the two major facts with regard to the Civil Disobedience Movement which, at this stage, we desire to emphasize. One is that, despite the sincere endeavours of many of the Congress leaders to keep the Movement "non-violent", experience again proved that it is inevitable, in a country such as India, that

an organised and strenuously conducted campaign of defiance of Government and of the law should result in serious and widespread disturbances. The other is that the amount of popular support which the Congress obtained for its activities was greater than many competent authorities,—on its own side as well as that of the Governmnet,—had supposed beforehand to be probable. By the beginning of July there was no Province in British India which had been altogether immune from the effects of the Movement, and in all except two,—Assam and the Central Provinces,—the Local Governments had at one time or another experienced considerable difficulty in dealing with the incidents to which it gave rise. After the first month or so the spectacular but somewhat fatuous demonstrations which had been staged in most of the larger towns to defy the Salt Law had begun to give place to other and more embarrassing manifestations of Congress activity. In Bombay,—where the Movement probably attained its greatest successes,—the local leaders at this stage organised a troublesome series of raids on the salt-pans along the adjacent beaches; but these activities came to an end with the arrival of the monsoon. Attention here was then chiefly concentrated,—as it already had been in other parts of the country,—on the boycott of British goods and the picketing of cloth and liquor shops; and in both these directions the various provincial Congress organisations achieved a substantial measure of success. There were also widespread attempts to establish a boycott of Government servants, and to incite the populace to refuse to pay taxes and land-revenue, which caused the authorities considerable anxiety, and some difficulty was also experienced as a result of Congress activities in Universities and schools; endeavours were moreover made on the part of Congress workers to subvert the loyalty of the troops and the police, but fortunately these proved almost entirely fruitless. The vast majority of those who assisted the Movement were Hindus, the Muslims, as a whole, holding aloof from it,—although individual members of the latter community did indeed take part in it; and after the rioting in Peshawar there were, for a while, some apprehensions that the hostility against the Government which had been aroused among the Muhammadan inhabitants of the Frontier Province would affect the attitude of their co-religionists elsewhere. From two other sections of the population, however, the Movement obtained a measure of support which few had anticipated, and which rendered the task of the

Government in dealing with it much more difficult. Throughout almost the whole country, and particularly in Bombay, a large proportion of the Hindu mercantile and industrial community showed active sympathy with the Congress, and substantial cash grants were obtained from these sources for the furtherance of the campaign, and particularly for supporting the thousands of "volunteers" whom the Congress employed to swell their processions, excite the public, and abuse the police. The other source from which unexpected assistance came was the women. Thousands of them,—many being of good family and high educational attainments,—suddenly emerged from the seclusion of their homes, and in some instances actually from *purdah*, in order to join Congress demonstrations and assist in picketing; and their presence on these occasions made the work the police were required to perform particularly unpleasant. Thus by the end of the first three months the Civil Disobedience Movement had proved in many ways surprisingly successful, and the energy and resources of the Government were fully engaged in combating it.

But serious though the situation at this time undoubtedly was, the main object of the Congress, which was nothing less than to cause a complete paralysis of the administrative machinery, had not been achieved. Despite the exceptional strain imposed upon the Government and its servants, its normal functions, in practically every district throughout the country, continued to be discharged in the ordinary way. Criminal and civil courts successfully dispensed justice; revenue was collected satisfactorily in all but a few restricted areas; life in rural India remained generally speaking as usual, and even in the towns, except on the occasion of some special demonstration, existence for the majority of people was almost normal; the workings of the railways, posts, and telegraphs, and the multitudinous other activities of Government were maintained as before; and if we exclude the occasions when arrests were rendered impracticable owing to the size of the crowds which had committed breaches of some particular law, the Government had as a rule succeeded in getting its orders successfully carried out. The arrangements provisionally made for dealing with the Movement at the outset had of course to be modified as the seriousness of the incidents to which it gave rise increased. In the initial stages Government endeavoured to avoid making arrests on a large scale; but as the tide of bloodshed and disorder extended over the

country this policy had to be abandoned, and by the second week in May a large number of the most prominent Congressmen, including Mr. Gandhi and Pandit Jawaharlal Nehru, were in jail. The gradual removal of the leaders from the scene of action, despite the fact that they had made arrangements in anticipation of this and had indeed expected it to occur much sooner than it did, undoubtedly proved a serious handicap to the development of the Congress plan of campaign. Another weapon in the hands of the Government, of which increasing use was made as the weeks passed by, was the promulgation of special Ordinances to deal with particular aspects of the Movement. Between the 19th of April,—when the Bengal Ordinance was introduced as a result of the Chittagong outrage,—and the 7th of July, six other Ordinances were promulgated, of which the most effective were those which imposed certain restrictions on the Press and armed the authorities with powers for dealing with intimidation and unlawful instigation.

Thus by the beginning of July there seemed reason to suppose that, unless its volume were further increased from some fresh and unlikely source, the Movement had already touched high-water mark and would now gradually subside. Despite the fact that the Congress had obtained widespread and in some respects unexpected support for its campaign throughout the country, the Government had now for three months successfully resisted its carefully organized and insidious attacks and continued efficiently to function; and its latent resources were immense. Henceforward, the enforced inactivity of the majority of the Congress leaders, and the careful application of the powers which had been obtained under the special Ordinances, might be expected to bring about a gradual diminution of the excitement and enthusiasm which had hitherto prevailed. Already, although the actual number of riots and disturbances was perhaps no smaller, their magnitude and gravity had considerably decreased, and in certain areas,—as for instance throughout most of the Madras Presidency and in Calcutta,—there were definite indications that the Movement was losing impetus. On the other hand, the clashes which had occurred between the forces of law and order and the populace had inevitably created a good deal of bitterness. This had been particularly the case when it became necessary for the police to use force for the dispersal of city crowds,—which consisted partly of hooligans, but partly also of genuinely "non-violent" persons; and the Congress organisers

took every opportunity of exploiting for their own purposes the emotions which these incidents aroused. By the simple expedient of staging a procession or demonstration on a scale large enough to force the authorities to take action against it, they could now count in many places upon being able to bring about an automatic revival in popular sympathy for their cause, and it seemed probable that the resources at their disposal would be sufficient to enable them to continue these performances for many months yet. At the meeting of the Working Committee which was held on the 25th of June,—many of the members being substitutes co-opted in place of those who had been arrested,—a very intransigent spirit was displayed, and the resolution calling upon the troops and police to disobey Government orders was emphatically confirmed. As a result, on the 30th, the whole Committee was proclaimed an unlawful association, and the acting president,—Pandit Motilal Nehru,—and several other members, were arrested. The deadlock therefore appeared complete, and the struggle, it seemed, must henceforward be one of attrition.

We must now transfer our attention from the Congress for a while, and consider how the events we have been describing affected the various other sections of Indian political thought. At the moment when the Civil Disobedience Movement started, the relations between the Government and certain political leaders not of the Congress persuasion were, unfortunately, somewhat strained. For despite the fact that the "Swarajist" members of the Legislature, in obedience to the resolution passed at Lahore, had refrained from taking their seats during the previous January, the 1930 Delhi session,—for reasons which we explained in our previous volume,—proved singularly productive of controversy. This, no doubt, was to some extent responsible for the fact that, during its struggle with the Congress, the Government secured but little active support from certain political groups which are usually designated "moderate". But it must not be supposed that the fortuitous storminess of the Delhi session constituted the sole explanation of their attitude. As we had occasion to point out in our last Report, many of those who remained outside the Congress fold,—although they disapproved of the claim for complete independence, and considered recourse to direct action very unwise,—were nevertheless in sympathy with much of the Congress programme. And it was not

to be expected that men who held views of this nature,—and a large proportion of the educated classes did,—should make any particular effort to help an administration which they themselves regarded as at the best no more than a necessary and transient evil. Some calculated that, by doing so, they would actually postpone rather than hasten the date when the reforms they so urgently desired could be introduced, since the Civil Disobedience Movement, in their opinion, had proved to be a remarkably effective means of demonstrating how widespread was the demand for political advance; in any case, few of them were likely to desire that an "alien" Government should completely overwhelm an organisation which was run entirely by their own compatriots, and in some instances by their friends and relatives.

It was largely owing to the operation of these two factors, therefore,—the one fundamental and the other adventitious,—that so large a proportion of moderate politicians refrained from committing themselves to any definite policy with regard to the Civil Disobedience Movement. In April, several members of the Nationalist group actually resigned their seats in the Assembly, but of these only a few went to the length of actively associating themselves with the Congress, and the remainder took no further action. During May, the All Parties Conference, which had assembled in Bombay under the chairmanship of Sir A. P. Patro, failed to reach any conclusions on the constitutional and other questions which it had assembled to consider, or to give the country a clear lead with regard to the Civil Disobedience Movement, and adjourned its meetings until July. Throughout this period the pronouncements of the Liberals were somewhat equivocal. While deploring the decision Mr. Gandhi had made, prominent members of this group on numerous occasions urged that the Government should take action which, in effect, would have deprived it of such means as it had devised for combating the Congress campaign; and on the 15th of May the Council of the Liberal Federation definitely requested the immediate repeal of the Press Ordinance and the release of all political offenders who had not been guilty of violence. Representatives of the Justice Party of the Madras and Bombay Presidencies, however, were rather more emphatic in their denunciation of the Civil Disobedience Movement, and, as we have seen, the vast majority of the Muslims regarded it from the outset

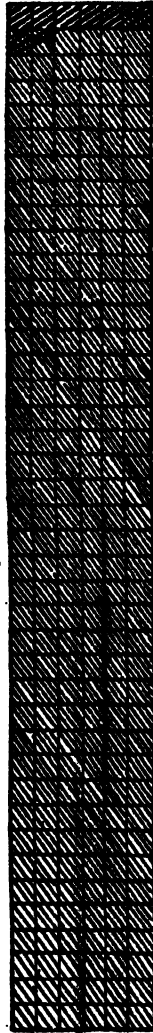
with marked disapproval and suspicion, and refused to be stampeded into an alliance with the Congress by the events on the Frontier. On the 21st of April, during the course of the All-India Muslim Conference in Bombay, it was asserted that the Movement was an attempt on the part of the Hindu majority to acquire dominance over the minority communities in India; and allegations to the same effect were made at a Muslim meeting on the 5th of May,—amongst others by Maulana Mohammad Ali, who had been intimately associated with Mr. Gandhi during the non-co-operation campaign ten years previously. Three days later the Council of the All-India Muslim Federation passed a resolution counselling Muslims to keep entirely aloof from the Congress, and advocating counter propaganda by means of leaflets and handbills. Henceforward, until the Movement was called off, there was no material change in the Muslim attitude towards it. The Sikhs also, generally speaking, showed little liking for the Movement,—though for a while the excitement aroused among them by particular incidents caused the authorities some anxiety. Again, there was, on the whole, singularly little interest displayed in Congress activities among labour organisations,—perhaps because some of them were infected with ideas of a communist nature with which they found the majority of Congressmen not in sympathy.

On the 13th of May, some encouragement was given to those nationalists who had not joined the Congress by the publication of an important statement by the Viceroy, and of correspondence that had passed between himself and the Prime Minister. In his statement, Lord Irwin made it clear that the Civil Disobedience Movement had not deflected either His Majesty's Government nor the Government of India in the least degree from the policy with regard to constitutional reforms which had been announced during the previous autumn. Although the Congress had refused to participate in it, the Round Table Conference would be held in London as arranged, and it had now been possible to decide when the proceedings should start. This would be about the end of the following October, immediately after the Imperial Conference concluded. Perhaps the most interesting passages in the correspondence between the Viceroy and the Prime Minister were those which discussed the question how the personnel of the Conference would be chosen. Lord Irwin declared that after examining

several alternative methods, and discussing the matter freely with men of widely different opinions, he had reached the conclusion that fair distribution of representation could only be assured by invitation, in consultation where possible with the interests concerned. This definite announcement with regard to the Conference undoubtedly had a reassuring effect, particularly on the Liberals. In June, the long awaited report of the Statutory Commission was issued. It is impossible in the space available to summarize the contents of this historic report. But something must be said of the reaction of Indian opinion to its recommendations. As has been explained in previous issues of these Reports, a large proportion of Indian nationalists had been bitterly aggrieved by the fact that the Commission contained no Indian members; many boycotted it persistently throughout the whole course of its operations. It was therefore *a priori* improbable that the Commissioners' proposals, whatever their nature, would be received with cordiality, and much of the adverse criticism which filled the press for several days after the publication of the second volume had been discounted in advance. But within the spate of pre-arranged and automatic denunciation there was also a good deal of genuine disappointment. Moderate nationalists of course tended to concentrate on the reforms recommended in the Central Government, and were practically unanimous in pronouncing them inadequate. Others,—as for example certain Europeans,—suggested that, irrespective of the question whether the changes would satisfy nationalists sentiment, the form of Government proposed would prove distinctly cumbrous and difficult to work. There was, naturally, a good deal of gratification amongst almost all sections of Indian political thought at the prospect of provincial autonomy, but leaders of the minority communities were generally speaking of opinion that neither in the Provinces nor in the Centre was proper provision made for safeguarding their special interests. The Muslims, for example, raised objection to quite a number of the proposals, and the Sikhs complained particularly that the percentage of seats allotted to them in the Central Legislature was insufficient. Finally, there was serious dissatisfaction amongst certain sectional groups,—notably the landholders,—who were much disturbed by the proposals made with regard to the taxation of agricultural incomes and the abolition of their separate franchise. In addition to all this, a good deal of alarm was created about this time, especially among

The Voters of British India.

7·4 Millions — Enfranchised (Shaded deep)



239·6 Millions — Unenfranchised (Shaded light)

N.B.—Each square represents 1,000,000 of population, according to the 1921, not the 1931, Census.

the Liberals, by rumours that delegates from the British Conservative and Liberal Parties,—as well as representatives of the Labour Government,—would participate in the Round Table Conference in London,—though subsequently, when these rumours were confirmed, the fact began to be appreciated that if members of the Opposition were not present, the chances of any settlement effected at the Conference being ultimately ratified by Parliament would be lessened. But by the time the Central Legislature assembled for its summer session in Simla on the 7th of July, it was undoubtedly a fact that, during the previous fortnight or so, the general political atmosphere had undergone a distinct deterioration.

This Session, although brief, was important. The amount of ordinary legislative business transacted was considerable, no less than nine Bills, all of a more or less technical nature, being passed.* A substantial number of resolutions and questions were dealt with, and four motions for adjournment were brought forward. The session was also distinguished by the fact that it marked the end of the second Council of State and of the third Assembly, the Viceroy having decided that as their life had already been extended for two sessions beyond the normal term, elections must be held during the following September. Of the motions for adjournment, notice of the first was given by Maulvi Muhammad Shafi Daoodi on the 14th, the subject being "the continuation of repressive measures in the North-West Frontier Province". On the 16th, notices of similar motions were received from Mr. Nehal Singh and Sardar Kartar Singh, to discuss respectively "the treatment of two Congress volunteers from the police in Simla", and "the firing into and violation of the sanctity of the Sisganj Gurdwara at Delhi"; and on the 18th Dr. Nand Lal desired that the House should adjourn in order to consider a dacoity which had been committed at Akbarpura town on the 22nd of June. The President (Maulvi Mohammad Yakub†) however was of opinion that no matter of urgent public importance was involved in any of these motions and accordingly

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* The Indian Lac Cess Bill, the Negotiable Instruments (Second Amendment) Bill, the Indian Forest (Amendment) Bill, the Indian Telegraph (Amendment) Bill, the Bombay Civil Courts (Amendment) Bill, the Benares Hindu University (Amendment) Bill, the Hindu Gains of Learning Bill, the Ajmer-Merwara Court Fees (Amendment) Bill, and the Mussalman Wakf (Amendment) Bill.

† Now Sir Mohammad Yakub.

ruled them out of order. As regards the resolutions brought forward during the session, there were two of sufficient importance to require individual mention here. The first was moved by Mr. K. C. Neogy on the 16th with regard to the serious communal riots which took place in Dacca during May, and which have already been referred to. In replying to the numerous speakers who supported Mr. Neogy, Mr. H. G. Haig, the acting Home Member, pointed out that the contention which he understood Mr. Neogy to have made,—namely that the police had deliberately refrained from restoring law and order, and that the Government had allowed this state of affairs to continue as a matter of policy,—was quite unjustified. Even more so, of course, was the suggestion made by another member that the Government had actually promoted the riots. The reason for what occurred lay in the fact that at the time the disturbances began, the police and other forces available in Dacca had been much depleted as a result of the Civil Disobedience Movement and the terrorist outbreak at Chittagong. And since a Committee had already been appointed to enquire into the matter, the Government of India were of opinion that to comply with Mr. Neogy's request and publish all correspondence which had passed between themselves and the Government of Bengàl would be undesirable. Mr. Neogy's resolution, when put to the vote, was defeated. The other resolution, which was moved by Mr. M. K. Acharya on the following day,—the 17th,—related to the " formulation of a scheme of self-government for India and the release of political prisoners ". But this leads us direct to what was undoubtedly the most important feature of the Simla Session,—that is, the trend of opinion with regard to the constitutional issue,—and in discussing this, we must proceed chronologically.

On the 9th of July, the Viceroy addressed members of both Houses. Although the speech contained no fresh announcement of policy, it was important in that it defined in unmistakable terms the Government's attitude towards the two outstanding problems of the time, namely the Civil Disobedience Movement, and the coming Round Table Conference. As regards the former, the most important passage was the following. " Those who have identified themselves with this Movement would have us regard it as a perfectly legitimate form of political agitation, to which resort is had only under pressure of regrettable necessity. I cannot take that

view. In my judgment and in that of my Government it is a deliberate attempt to coerce established authority by mass action, and for this reason, as also because of its natural and inevitable developments, it must be regarded as unconstitutional and dangerously subversive. Mass action, even if it is intended by its promoters to be non-violent, is nothing but the application of force under another form, and, when it has as its avowed object the making of Government impossible, a Government is bound either to resist or abdicate. The present Movement is exactly analogous to a general strike in an industrial country, which has for its purpose the coercion of Government by mass pressure as opposed to argument, and which a British Government recently found it necessary to mobilise all its resources to resist. Here it has been sought to employ more dangerous weapons even than this, and the recent resolution of the All-India Working Committee of the Congress, insidiously designed to seduce police and troops from their allegiance, leaves no longer room for doubt of the desperate lengths to which the organisers of the Movement are prepared to go, and gave Government no option but to proclaim the body responsible for such a resolution an unlawful association. He would in truth be a false friend of India who did not do his utmost to protect her from acquiescence in principles so fundamentally destructive . . Therefore it is that I have felt bound to combat these doctrines and to arm Government with such powers as seem requisite to deal with the situation. I fully realise that in normal times such frequent resort by the Governor-General to the use of his special powers would be indefensible. But the times are not normal, and, if the only alternative is acquiescence in the result of efforts openly directed against the constituted Government of the King-Emperor, I cannot for one moment doubt on which side my duty lies. . . So long as the Civil Disobedience Movement persists, we must fight it with all our strength." As regards the Round Table Conference the Viceroy's words were equally explicit. "The date of assembly of the Conference has already been made public, and on behalf of His Majesty's Government I am now able to define its functions more precisely. After very careful consideration, His Majesty's Government have reached the conclusion that it would not be right to prescribe for the Conference any terms more limited than were implied in my statement of November 1st last, and that the

Conference should enjoy the full freedom that those words connote. The Conference accordingly will be free to approach its task, greatly assisted indeed, but with liberty unimpaired, by the Report of the Statutory Commission, or by any other documents which will be before it. It is the belief of His Majesty's Government that by way of conference it should be possible to reach a solution that both countries and all parties and interests in them can honourably accept, and any such agreement at which the Conference is able to arrive will form the basis of the proposals which His Majesty's Government will later submit to Parliament. From such a definition of the scope of the Conference, it is clear that His Majesty's Government conceive of it, not as a mere meeting for discussion and debate, but as a joint assembly of representatives of both countries, on whose agreement precise proposals to Parliament may be founded. The Conference will thus enjoy the unfettered right of examining the whole problem in all its bearings, with the knowledge that its labours are of no academic kind, and His Majesty's Government still hope that Indians of all schools of thought, whatever the attitude that some have hitherto taken, will be ready to share in this constructive work. I see no reason why, from frank discussion on all sides, a scheme might not emerge for submission to Parliament which would confound the pessimism of those who would tell us that it is impossible for Great Britain and India, or for the various interests in India, to reach agreement."

It was probably the tone even more than the substance of this speech,—and unfortunately it is impossible to convey an impression of the former in the brief quotations we can allow ourselves,—that was responsible for the important practical response which it evoked. This, however, as we shall indicate in a moment, was manifested chiefly outside the walls of the Assembly. Within the House itself,—although the address had created so good an impression,—the Government, only three days later, was severely defeated on the only important motion bearing on the constitutional issue which was put to the vote during the session. The significance of this incident however requires some explanation. On the day after the Viceroy's speech, when the Finance Member, Sir George Schuster, brought forward a demand for a supplementary grant which was intended primarily to defray expenses connected with the Round Table Conference, Mian Mohammad Shah Nawaz moved a token

cut of Rs. 100 in the grant and immediately proceeded to criticize the recommendations of the Statutory Commission. After some discussion had taken place as to what subjects it would be permissible to mention in relation to a motion of this kind, the President decided to allow the House very wide latitude, of which full advantage was subsequently taken. The debate ranged over an exceptional variety of subjects during the course of three full working days, and nearly all the prominent speakers in the House contributed to it. Not only were the chances of the Round Table Conference yielding results satisfactory to Indian sentiment discussed, but also the general policy of the Government with regard to the Civil Disobedience Movement, and while the latter came in for a good deal of adverse criticism, most of the speeches,—as was pointed out by the Leader of the House, Sir George Rainy, shortly before the motion was put,—were remarkably temperate and responsible in tone. Nor was there any real doubt that the great majority of members were fully in favour of the Round Table Conference being held, and of granting a sufficient sum of money for the purpose. The point to which speaker after speaker reverted was the scheme for constitutional reforms proposed by the Statutory Commission; and it was evident that those who voted against the Government did so primarily to indicate that for one reason or another they considered the recommendations unacceptable. On the 17th, Mr. M. K. Acharya's resolution regarding the formulation of a scheme of self-government for India, and the release of political prisoners,—to which reference has already been made,—was discussed, and afforded members a further opportunity of expressing their opinions on the problems which had been debated on the 10th, 11th and 12th. The majority of those who spoke urged that in order to " conciliate the country ", and create a suitably peaceful atmosphere for the inauguration of the Round Table Conference, the Government ought forthwith to make arrangements whereby Mr. Gandhi and other Congressmen could be released from jail. Towards the end of the discussion, however, an effective speech was made by Sir George Rainy, who pointed out that it was unfair to imply that the blame for the existing situation lay equally on the Government and the Congress; that the Viceroy, since the previous autumn, had made every possible endeavour to obtain the co-operation of Mr. Gandhi and his colleagues; yet despite the

opportunity provided by the coming Round Table Conference and the arguments His Excellency had used in his address to the Legislature in January 1930, they had elected to start a campaign of direct defiance of the Government; in existing circumstances, while the campaign continued, the Government could scarcely release them without, in effect, abdicating; but the door of conciliation still remained open to them if they modified their policy.

Meanwhile, as we have already indicated, interesting political developments had been in progress outside the House. On the 13th, a letter had been addressed to the Viceroy by the two Liberal leaders, Sir Tej Bahadur Sapru and Mr. Jayakar. After stating that they were fully alive to the dangers of the Civil Disobedience Movement, with which neither of them had sympathized or been associated, they made the following proposal. "We think it is our duty to our country and to the Government that we should make an endeavour to ameliorate the present situation by discussing the question with some of the leaders of the Movement, in the hope and belief that we may be able to help them in the restoration of normal conditions. If we have read Your Excellency's speech aright, we think that while Your Excellency and your Government feel compelled to resist the Civil Disobedience Movement, you are not less anxious to explore every possibility of finding an agreed solution of the constitutional problem. . . We therefore approach Your Excellency with the request that you may be pleased to permit us to interview Mr. Gandhi, Pandit Motilal Nehru, and Pandit Jawaharlal Nehru, so that we may put our point of view before them and urge them in the interests of the country to respond to our appeal, to enable the big issue of constitutional advance to be solved in a calm atmosphere. We desire to make it plain that in going to them, we shall be going on our own behalf, and we do not profess to represent either the Government or any party in taking this step. If we fail in our attempt, the responsibility will be ours." After the Viceroy had given his assent to this proposal, discussions began, and continued until the 5th of September. Mr. Gandhi was visited in Yervada jail by the Liberal leaders on the 23rd, and on the 27th they saw Pandits Motilal and Jawaharlal Nehru in Naini jail. On the 1st of August Mr. Jayakar saw Mr. Gandhi again. Ten days later, in order that the conversations might not be frustrated by the inability of the

Congress leaders to confer with each other, Pandits Motilal and Jawaharlal were allowed to travel from Naini to Yervada, and while imprisoned there they and Mr. Gandhi, together with Mr. Vallabhai Patel and Mrs. Naidu, had a series of discussions between the 13th and 15th with Sir T. B. Sapru and Mr. Jayakar. On the 25th, the latter were in Simla again, reporting to the Viceroy the results of their activities, and on the 5th of September, after a final interview with Mr. Gandhi, they revealed that their attempts at a settlement had failed. From the correspondence which was published the next day it was clear that, throughout the negotiations, the Congress leaders had refused to modify in any way the " terms of peace " they had authorized the intermediaries, at quite an early stage in the proceedings, to place before the Viceroy, and that the nature of these terms was such as to render it inconceivable that the Government would accept them. " No solution would be satisfactory ", declared the Congress leaders, " unless it recognized the right of India to secede from the British Empire, gave India complete national government responsible to the people,—including control of defence forces, economic control, and covering all the eleven points raised in Mahatma Gandhi's letter to the Viceroy,* and also gave the right to refer, if necessary, to an independent tribunal, such British claims and concessions, including the public debt of India, as seemed unjust. If the foregoing terms were acceptable to the British Government, the Civil Disobedience Movement would be called off, but picketing of foreign cloth and liquor shops would continue,—and also salt manufacture, but not raids on salt *depôts*. It would be necessary also that politicals not guilty of violence should be released, confiscated properties restored, fines refunded, and village officers who resigned or were dismissed should be reinstated if they so desired. The last few clauses should apply also to the non-co-operation period of 1920-21. All Ordinances should be repealed. The composition of the Round Table Conference and the Congress representation thereat should be decided only by satisfactory settlement."

* These appear to have been originally defined in an article by Mr. Gandhi published in " Young India " during the last week in the previous January, and included total " prohibition ", devaluation of the rupee, and reduction of land revenue, of military expenditure, and of the salaries of higher officials by 50 per cent. in each case.

We must now retrace our steps for a while, and describe the administrative problems with which the authorities had to deal during the second phase of the Civil Disobedience Movement,—that is to say, during the four months between the beginning of the Simla Session of the Legislature and the opening of the Round Table Conference in London. It may be thought that, even if our proposed subdivision of the history of the Movement into three phases is not somewhat arbitrary, the first phase might more reasonably be considered to have continued until the negotiations with the two Liberal leaders had definitely broken down,—that is to say until the 5th of September, rather than the 7th of July, which is the date we have actually chosen. But as was indicated at an earlier stage, the prospects that these negotiations would succeed were never very bright, in view of the attitude previously adopted by the Congress, and in particular of the resolutions passed by the Working Committee on the 25th of June. Moreover, during the period when Mr. Gandhi and the other leaders were given these facilities for political consultations in jail, the conduct of their supporters outside seemed expressly designed to render a settlement more improbable. On two separate occasions,—namely in Bombay on the 2nd of August and in Delhi on the 27th,—such prominent Congressmen as were at the time at liberty, went out of their way to defy the Government so blatantly as to court arrest.

But apart from all this, our choice of dates is in any case justified by the actual course the Movement took. For, during the four months beginning in the second week of July, the trend of events was in several respects noticeably different from what it had been hitherto. Perhaps the most striking change occurred in the towns, where the number of riots provoked by incidents connected with the Movement showed a very substantial decrease. Indeed, if we exclude Bombay, it would be true to say that not a single serious riot took place in any of the major cities between the start of the summer session of the Legislature and the inauguration of the Round Table Conference; and of the two riots in Bombay, the first, on the 31st of August, arose out of a labour dispute, while the second, on the 6/7th of September, took a communal turn. This, of course, constituted a marked contrast with what had occurred during the first three months of the Movement; and the number of disturbances and minor clashes with the police in the towns also

showed a tendency to decrease. Thus the enthusiasm of the urban population for the Congress campaign, or at any rate their liability to get excited by it, was evidently now on the wane. On the other hand, the trouble in the rural areas throughout this period was on the whole more serious than before, and a large number of unpleasant incidents occurred. This was no doubt partly due to the fact that the Movement was actually started in the towns, and naturally took some time to radiate out into the country. In addition, it should be borne in mind that in conducting their activities against the Government in the villages, the Congress was greatly assisted by the accidental circumstance that they were doing so at a time of acute economic depression. For, although the monsoon had been generally speaking satisfactory, the extraordinary fall in the prices of agricultural produce had by this time begun to cause a good deal of distress, and it was thus easier to arouse hostility against the authorities among the ignorant peasants and also to secure for a small sum the services of " volunteers ". As the slump in trade increased, it also of course helped the representatives of the Congress to keep their activities going in the towns, by creating unrest and discontent which they could exploit to their own advantage.

Another respect in which the second phase of the Movement differed from the first was that, by the time it began, the variations in the way the different Provinces were reacting to it had become more definite, and henceforward it was possible for the Government to anticipate the future course of events throughout the country with greater certainty. The state of affairs may be summarised as follows. In Assam, the Movement had never been strong, and was not now considered likely to give much further trouble. Throughout the Madras Presidency conditions had been bad during the April and May, and several serious riots had taken place; but by July the application of the various methods devised for combating the Movement had proved remarkably successful, and public manifestations of Congress activity had almost ceased. In the Punjab and Bihar and Orissa, too, the situation was noticeably better, though not so satisfactory as in Madras. In the Frontier Province, the United Provinces, and Bengal there had also been some improvement; in Bengal and the United Provinces, however, the endeavours of the authorities to combat the Movement were handi-

capped by the increase in agrarian unrest and terrorist activities,—the latter being more conspicuous in Bengal and the former in the United Provinces; while in the Frontier Province the situation was still complicated by the tribal incursions which have been described in Chapter I, and martial law had to be declared in Peshawar on the 15th of August. The Central Provinces had remained less affected by the Movement during its first phase than most other Provinces, but by about the end of June conditions there had markedly deteriorated, and throughout July, August, and September the local Congress organisation caused the authorities much trouble by staging mass demonstrations against the Forest Laws and inciting the aboriginal tribesmen against the Government; most of these activities, however, had subsided before the second phase of the Movement came to an end. In the Bombay Presidency, on the other hand, the Congress campaign was maintained with almost unabated vigour; little if any improvement was discernible either in Bombay city, the storm centre, or in Gujerat, where conditions had been bad almost from the outset, and the trouble by this time had spread to several other rural areas as well. It could, however, be claimed with some confidence, by the beginning of July, that in at least four Provinces the Movement had been definitely curbed, and that in the remainder, the chances of Congress activities causing a paralysis of the administrative machinery,—which was what they were primarily intended to do,—were now greatly reduced. Throughout the country organised defiance of the Salt Law, although it had been fairly useful at the start as a means of creating popular excitement, had altogether failed to affect Government revenues, and was now discredited. Attempts to seduce the troops and police from their allegiance had conspicuously failed. Forest *satyagraha*, and the picketing of liquor shops, had yielded rather more result. But the boycott of educational institutions had at no time proved successful, and began to arouse so much indignation among the literate classes after a few months that it was finally decided, in October, to abandon it altogether as a method of Congress "warfare".

After the Civil Disobedience Movement had been in progress for three months, therefore, its functional as well as geographical limitations were fairly clear, and fresh experiments on the part of its leaders,—such as the belated attempts initiated in October to set up a parallel system of administration, by means of unconstitutional

courts and so forth,—seemed unlikely to achieve much. From July onwards, the struggle between the Government and the Congress assumed the characteristics of a war of attrition, in which the chief weapons remaining in the hands of the latter were the boycott of British goods,—particularly cotton manufactures,—the persecution of Government servants and others who had incurred its disfavour, and the incitement of the populace to refuse payment of rents and taxes. As regards the no-revenue campaign, a considerable measure of success had been obtained by the Congress at quite an early stage in Gujerat; but elsewhere, during the second phase of the Movement, they did not manage to cause the District Officers much trouble except in a few restricted areas,—though towards the end of October there were signs that, in the United Provinces at any rate, their propaganda had begun to affect the population over larger tracts of country than formerly. Persecution of Government servants,—particularly those in the humbler posts,—and of their relatives and friends, naturally caused a good deal of inconvenience, but had ceased, at this stage, to give the authorities reason for serious anxiety. When used against members of the general public who attempted to act contrary to Congress wishes, however, the weapon of social ostracism proved very efficacious, particularly in connection with the boycott of British goods. Despite the fact that thousands of small Indian traders were by this time practically ruined by the paralysis of trade which the campaign had brought about in commercial centres such as Bombay, there was no appreciable change in their attitude during the critical weeks towards the end of October when fresh stocks are usually purchased, and the Congress ban on the import or removal of goods remained generally speaking effective. Social pressure alone, however,—even when exercised in its most cogent form through the medium of the caste system, and accompanied by mock funerals, denial of menial services, and complete personal ostracism,—would have been insufficient to account for what occurred, if a substantial proportion of the Hindu trading class had not still remained definitely in sympathy with the Movement,—despite the notable decline in outward manifestations of enthusiasm for it. Among the more transient aspects of the Congress campaign during the second phase was an attempt to boycott the elections, but this was only successful locally, in certain Hindu constituencies. The

demonstrations that were held to protest against the Round Table Conference generally speaking fell flat. In dealing with the Movement during this period some temporary embarrassment was caused to Government by the fact that a large number of Congressmen had now begun to be released from jail on the expiry of their sentences, and leaders such as Pandit Jawaharlal Nehru, Mr. Vallabhai Patel, Mr. S. C. Bose and Mr. Sen Gupta,—while they remained at liberty,—were active in their endeavours to revive popular interest in the campaign where they found it flagging.

Certain of the more important incidents that occurred during the second phase of the Movement must now be enumerated. Among the various riots and disturbances the majority of which arose out of events connected with Congress activities were the following. In July, on the 8th, 9th and 10th, there were disturbances in Rangpur (Bengal), Vellore District (Madras), and Lahore; and on the 11th, disturbances occurred in Bombay and Etah (United Provinces). On the 17th, there was a riot in Madura (Madras) and a disturbance in Amraoti (Central Provinces); and there were disturbances in Jubbulpore (Central Provinces) and in Calcutta on the 19th. On the 23rd a riot occurred in Shikarpur (Bombay), and on the following day a disturbance in Ludhiana (Punjab). In August, there were disturbances in Bombay on the 2nd, in Champaran District (Bihar) on the 12th, in Amritsar on the 14th, in Karachi on the 22nd, and in Kaira District (Bombay) on the 31st. On the 24th, a party of police was attacked in Betul District (Central Provinces) by Gond tribesmen who had been breaking the Forest Law at the instigation of the Congress. In September, on the 1st and 2nd, there were disturbances in Khulna District (Bengal) and in Karachi, and on the 4th there was an affray between the police and agriculturists who had been incited by Congress workers to defy the Government in Satara District (Bombay). A riot occurred in Bulandshahr District (United Provinces) on the 12th, and a disturbance in Raipur (Central Provinces) on the 16th. On the 25th there was a serious riot near Panvel (Bombay) as a result of incidents not dissimilar to those which provoked the clash with the police in Satara District three weeks previously. A disturbance occurred in Moradabad on the 26th, and there was trouble in Gopinathpore (Bengal) and Raipur (Central Provinces) on the 30th. There was no serious rioting during October, but disturbances

occurred near Cawnpore on the 2nd, in Midnapore District (Bengal) on the 3rd, in Roorkee (United Provinces) and near Tamluk (Bengal) on the 4th, in the Bhandara and Seoni Districts of the Central Provinces on the 6th and 10th respectively, in Tippera District (Bengal) on the 17th, near Nasik (Bombay) on the 19th, in Dinajpur District (Bengal) on the 22nd, in Moradabad on the 24th, in Bombay on the 26th, near Chandausi (United Provinces) on the 28th, and in Delhi on the 29th. Disturbances also took place in Bombay on the 5th and 7th of November, and there was a riot in the Santal Parganas (Bihar and Orissa) on the 10th/12th. The persistent refusal of the majority of Muslims to participate in the Civil Disobedience caused some increase in communal tension during this period, and several serious Hindu-Muslim riots occurred, of which perhaps the worst were those which took place in and around Sukkur in Sind (Bombay) between the 4th and 11th of August and affected over a hundred villages. The outbreak in the Kishoreganj subdivision of Mymensingh District (Bengal) on the 12th/15th of July was also on a large scale. In addition, there were communal disturbances on the 3rd of August in Ballia (United Provinces); on the 6th of September in Nagpur, and on the 6th/7th September in Bombay; and a Hindu-Christian riot broke out near Tiruchendur (Madras) on the 31st of October. The only noteworthy incident arising out of a labour dispute was the riot amongst the mill-hands in Bombay on the 31st of August. The activities of terrorists, however, and of those who imitated their methods, increased alarmingly, particularly during the latter part of the period. In July, a bomb burst in Peshawar on the 8th, and there was an explosion in Lahore on the 21st. On the 8th of August an attempt was made to murder the Commissioner of Jhansi (United Provinces), and on the 25th bombs were flung in Calcutta at Sir Charles Tegart, the Commissioner of Police. On the 26th and 27th bombs exploded outside police quarters in Calcutta, and there was also an explosion in Amritsar on the former date. On the 28th a civil officer was attacked in his house in Barisal District (Bengal). The following day, in Dacca, Mr. Lowman, the Inspector-General of Police, Bengal, and Mr. Hodson, Superintendent of Police, Dacca, were shot, and the former died two days later. On the 30th, bombs were thrown at police officers in Mymensingh (Bengal), and a similar outrage was committed in Bannu (Frontier Province) on

the 31st. In September, on the 7th, the Dacca-Calcutta mail was derailed, and a bomb exploded near the house of a police officer in Rajshahi (Bengal). On the 8th an explosion occurred near a police post in Benares. During the latter half of the month there were explosions or bomb-throwing in eight different places, including Karachi, Jessore (Bengal), Murshidabad District (Bengal), Khulna District (Bengal), Rawalpindi, Bannu, and Khurja (United Provinces). Of these incidents, the most alarming was probably that which occurred in Rawalpindi on the 27th, when a bomb was flung at a party of police, but fortunately failed to explode. An attempt was also made, on the 17th, to derail the Delhi-Calcutta mail near Allahabad. In October, on the 1st, a bomb exploded outside the house of a police officer in Benares, and an attempt was made to shoot a police officer near Lahore three days later. There was a bomb explosion in Allahabad on the 5th. On the 10th, a police officer and his wife were shot at in Bombay. On the 12th and 13th, attempts were made on the lives of police officers in Lahore and Mymensingh, and Jhansi (United Provinces) was the scene of an attempted train-wrecking on the 19th. There were bomb explosions near Ludhiana on the 22nd and in Calcutta on the 30th. On the 1st of November, a policeman was shot at in Delhi, and a bomb exploded in Peshawar. A shooting outrage occurred near Lahore on the 5th, and explosions occurred in Karachi and Ferozepore on the 7th and 11th respectively.

As this Report is primarily intended for the use of Members of Parliament, the next subject that comes up for our consideration, namely the Round Table Conference in London, need not, despite its obvious and immense importance, be discussed at great length; for English readers are probably as well acquainted with what occurred as any one from this country. It will be sufficient to indicate some of the outstanding events that arose in connection with it, and the way in which opinion in India reacted to them. From the time when the lists of prospective delegates were published, newspapers and speakers who favoured the Congress point of view had made strenuous endeavours to belittle the significance of the impending deliberations in London, and during October a few hostile demonstrations were attempted against those who were proceeding thither. Throughout the early autumn there had been talk in Congress quarters of arranging that a number

of nationalist newspapers should refuse to print any account whatever of the Conference proceedings; but by the beginning of November, when most of the delegates had arrived in London and news of their conversations and activities there had begun to come through, it was evident that this would be quite impracticable, owing to the great interest the public was displaying in what was going on. Even the extremer section of the Congress press, therefore,—although still assuming that the Conference would achieve nothing,—began to give prominence to items of news connected with it, and for some weeks, at any rate, there was probably more attention paid to this subject than to the course of the Civil Disobedience Movement. Moreover, the attempts which it had been anticipated the Congress would make to intensify their campaign at the moment when the Conference was formally inaugurated did not succeed, and very little enthusiasm was aroused by the meetings of " protest " which were held on the 12th of November. Indeed, there was generally speaking a decline rather than an increase in anti-Government activity during the month, and it may therefore be said that, despite the refusal of the Congress to participate in it, the Conference actually opened in more auspicious circumstances than might have been expected.

Before we actually summarize the course the proceedings in London took, it is necessary to explain that, in the previous July, as soon as the report of the Statutory Commission was published, the Government of India had set about the task of formulating its opinions on the recommendations made; and during the latter part of the summer it became known that these had been embodied in a confidential Despatch which had been forwarded to London. At the time, there was naturally much speculation about its contents, which, however, were not disclosed until the opening day of the Conference. The Despatch, when released, proved to be a unanimous document, signed by the Viceroy and all seven members of his Council, and containing the considered views of the Government of India on the whole field of constitutional reform. Probably the most interesting portion of it was that which dealt with the structure of the Central Government. " Our proposals for the Centre," it declared, " in amplification of the plan put forward by the Commission, have been designed with a double purpose. On the one hand we have sought to examine the means by which the relations between Executive and Legis-

lature can be established on a basis which offers a reasonable chance of harmony in working. On the other we have endeavoured to point the way to action that may now be taken to place upon the constitution the first, but definite, impress of Dominion Status. . . . The Government of India would no longer merely be the agent of the Secretary of State. For the first time it would possess a distinct individuality. . . . It is the essence of our proposals that control should be of such a nature as to establish partnership in place of subordination." In several other respects the system of Government envisaged by the Viceroy and his Council differed interestingly from that recommended by Sir John Simon and his colleagues, but these contrasts cannot be analysed in detail here. The general spirit of the Despatch was revealed in the opening section which surveyed the existing political situation in India, and stated that " the Civil Disobedience Movement. . . . has exhibited with sufficient plainness the strength of nationalist forces and also their limitations. It is clear that they have on their side a substantial measure of support from educated Hindus of all classes . . . There is little doubt also that the minority communities to a large extent share in these broad nationalist aspirations, but . . . they are not without apprehensions of their position in a self-governing India, and are concentrating attention on the protection of their rights and interests . . . The time has however passed when it was safe to assume the passive consent of the governed . . . The broadest considerations of Imperial policy demand that we should spare no efforts, and even take some risks, in order to arrive at a constitutional solution which will give reasonable scope to the ideas and aspirations that are moving India to-day." As regards the question of the Indian States, the views of the Government of India, at the time when the Despatch was written, did not differ materially from those of the Statutory Commission, as the following passage shows. " The Commission have pictured the ultimate constitution of India as an All-India Federation including not only British India, but also the Indian States. That is an ideal which we fully accept . . . But it is clear . . . that this ideal is at present distant, and that the Federation of Greater India to which they look forward cannot be artificially hastened . . . The time has not yet come when the general body of Indian States would be prepared to take a step so far-reaching in its character as to enter into any formal federal rela-

tions with British India." It was no doubt owing to this expression of opinion on the federal question, and also to the fact that it had been decided not to publish the Despatch until the Round Table Conference had actually begun, that the scheme formulated by the Government of India during the summer did not attract much public attention at the time of its publication; for even before the formal inauguration of the Conference in St. James' Palace on the 12th of November, it was evident that some remarkable developments were likely to occur with regard to the relations between British India and the States.

The attitude adopted by the Rulers and representatives of the States was indeed not only the most surprising, but undoubtedly also the most important feature of the whole Conference. During the course of the speeches made in the first plenary session between the 16th and the 21st of November, before the Conference subdivided into Committees, H. H. the Maharajah of Bikaner definitely stated that he was "convinced that the States would make the best contribution to the greater prosperity and contentment of India as a whole in a federal system of government composed of the States and British India"; and two days later the then Chancellor of the Chamber of Princes, H. H. the Maharajah of Patiala, confirmed this view, declaring that he believed that the quickest method of achieving India's enhanced status and dignity was by federation; that only thus could the States join British India in the formation of Greater India; and that he contemplated the Crown, British India, and the Indian States joining in a system which would provide for joint management and control. The extent to which these declarations were likely to alter the whole problem with which the Conference was confronted was emphasized by Lord Reading on the 20th, who pointed out that while both the report of the Statutory Commission and Government of India's Despatch had stressed the desirability of federation, in neither of these documents had it been conceived as other than an ultimate goal; as a result however of what had occurred subsequent to their publication, it was now possible for all to work together so that the great conception of an all-India federation might be realized; and that were there general agreement on this point, then the Conference would have succeeded to a great extent at the start, and changed the whole aspect of the pre-Conference situation. So rapidly did things move at this

stage that before the Conference sub-divided into Committees, arrangements had been made for the constitution of a special "Federal Relations" Committee to examine the whole problem.

These dramatic developments naturally intensified the interest the proceedings in London had already aroused in India,—though their ultimate implications were perhaps, at first, not fully appreciated. On all sides the policy enunciated by the Princes was commended, the Liberals and Congressmen in particular applauding it as a great patriotic gesture destined to advance the nationalist cause. Subsequently, during December, attention tended to be concentrated chiefly on the activities of the Minorities Committee, and the failure of the delegates to reach any settlement of the communal question caused a serious reaction, the Congress press at this time resuming its assertions that the Conference was doomed to failure, and insinuating that the deadlock which seemed to have been reached over this particularly important problem had been caused in some way by British intrigue. Muslim opinion on the other hand appeared generally to consider the *impasse* to be due to the unaccommodating attitude of the Hindus, and numerous telegrams were sent to London urging the Muslim delegates to stand fast by their original and legitimate demands; and threatening them with repudiation on their return if they did not. Early in January, however, interest in the subjects with which the majority of nationalists were primarily concerned was suddenly revived. On the 3rd, an impressive speech had been made by Sir T. B. Sapru, at a meeting of the Federal Structure Sub-Committee,* on the desirability of introducing a form of responsible Government in the Centre as well as in the Provinces; and two days later, on behalf of the Liberal section of the British delegation, Lord Reading made a statement on this problem. In view of the position held by the Liberal Party in British Parliamentary politics, and of the fact that Lord Reading had been Lord Irwin's predecessor as Viceroy of India, very great importance was naturally attached to this speech. After again drawing attention to the revolutionary effect which the decision of the Princes to join in a federal constitution had had upon the problems before them, Lord Reading said that the Liberal section of the

* This had been constituted as a sub-committee of the Federal Relations Committee previously referred to.

British delegation approached the subject of responsibility of the federal Executive and federal Legislature with a genuine desire to give effect, as far as they legitimately could, to the view of the British Indian delegation, provided adequate safeguards and reservations were introduced to enable the Government of India to be carried on with reasonable security and protection to all interests; and the necessary safeguards were, in fact, very little in advance of those which it had already been admitted must be made. On this basis, he broadly approved of the setting up of a Cabinet of seven or eight Ministers in charge of the various Departments, and considered that the Cabinet should have collective responsibility. He looked forward to a time when there would not be opposition between the Cabinet and the Viceroy or the Legislature and the Viceroy, and when the whole of the Ministry would be doing their best to give effect to the view of the Legislature or to explain to the Legislature why a particular decision was necessary. In those circumstances many of the safeguards and reservations would in all probability never be brought into play..

From this date onwards events again moved rapidly, until they culminated in the Prime Minister's speech to the delegates on the 19th of January, and his formal enunciation of the policy of His Majesty's Government with regard to the Indian constitutional problem. Perhaps the most important passages of the latter* were the following. "The view of His Majesty's Government is that responsibility for the Government of India should be placed upon the Legislatures, Central and Provincial, with such provisions as may be necessary to guarantee, during a period of transition, the observance of certain obligations and to meet other special circumstances, and also with such guarantees as are required by the minorities to protect their political liberties and rights. In such statutory safeguards as may be made for meeting the needs of the transitional period, it will be a primary concern of His Majesty's Government to see that the reserved powers are so framed and exercised as not to prejudice the advance of India through the new Constitution to full respon-

* It is reproduced in full in Appendix II.

sibility for her own Government . . . His Majesty's Government have taken note of the fact that the deliberations of the Conference have proceeded on the basis, accepted by all parties, that the Central Government should be a federation of all-India, embracing both the Indian States and British India in a bicameral Legislature . . . With the Legislature constituted on a federal basis, His Majesty's Government will be prepared to recognize the principle of the responsibility of the Executive to the Legislature."

Before proceeding to examine the very important consequences which ensued from the Prime Minister's announcement, we must turn aside to consider the administrative problems with which the Government had meanwhile been confronted. And since the consequences of the Conference were primarily political, and took some time to affect the administrative situation, there would be no point in our concluding our account of the latter precisely on the 19th of January; we propose, indeed, to carry it on to the 5th of March. Throughout the three and a half months subsequent to the opening of the deliberations in London, the struggle between the Government and the Congress here continued on approximately the same lines as before. The boycott of British goods remained generally speaking effective, and the accentuation of the economic depression facilitated the endeavours of the Congress to create difficulties for the authorities in rural areas. But no fresh method of Congress " warfare " was put into operation during this period,—if we exclude some attempts to handicap the Census operations by obliterating house-numbers and so on,—and although the maintenance of the boycott, and of social pressure in support of it, indicated that a large number of people were still at heart in sympathy with the Civil Disobedience Movement, there were increasing signs that active enthusiasm for it was subsiding. This general weariness and disillusion was manifested in a variety of ways. The failure of the Congress leaders to intensify their campaign during November, as a counterblast to the Round Table Conference, was significant, as also was the general decline of interest in the organised demonstrations on specified " days " and " weeks " upon which they had been accustomed to rely as a means of stimulating popular excitement. This tendency had been noticeable for some months, and, as we have

seen, the demonstrations held in protest against the Round Table Conference on the 12th of November had been distinctly feeble. Some enthusiasm was indeed aroused shortly afterwards by the processions and meetings on "Jawahar day",—which was organized in consequence of the re-arrest of Pandit Jawaharlal Nehru,—and disturbances occurred in a few towns, but generally speaking the trouble was on a smaller scale than had been anticipated. This was also true of "Sholapur martyrs' day" and "Independence day" which occurred in January,—the former being a celebration in honour of four persons who had been executed for murders committed in Sholapur during the riots in May. A further indication of exhaustion was the tendency of the Movement to be accompanied by numerous minor acts of violence. This was particularly so with regard to the boycott of British goods, which still remained the most conspicuous feature of the Congress campaign; and both in Bombay and Amritsar ugly scenes were witnessed when merchants attempted to defy the Congress ban on the trade in cotton manufactures. Yet another sign of the increasing exasperation and ill-temper which the Movement was creating, both among those who supported it and those who did not, was to be found in the deterioration in Hindu-Muslim relations. During December, while the proceedings of the Minorities Committee in London were attracting attention, there was a noticeable hardening of opinion on both sides, and subsequently, as we shall explain at a later stage, the growing antagonism between the two communities blazed forth in a series of savage communal riots.

The events of this third and last phase of the Civil Disobedience Movement must now be examined in greater detail. During the latter part of November, as we have already mentioned, there was generally speaking a decline in Congress activities, but in December, a temporary recrudescence occurred. The only noteworthy incidents arising out of the campaign during the last eighteen days of the former month were the disorders,—none of them very serious,—that occurred on the 16th in Bombay, Calcutta, Delhi, Surat, and Muzaffarpore as a result of the celebration of "Jawahar day"; an unpleasant incident in Karachi on the same date,—in connection with the opening of a new wharf by the Governor of Bombay,—and disturbances in Barisal (Bengal) on

the 22nd, in Saran District (Bihar) on the 27th, and in Bombay on the 30th. In December, there were disturbances in Benares on the 3rd and in Bombay and Karachi on the 5th; and on the 10th and 12th respectively there occurred the incidents in Amritsar and Bombay which have already been referred to. The latter arose as a result of a merchant having asked for police protection while moving foreign cloth; as one of the lorries conveying it was in motion the crowd threw stones at it and rendered the driver unconscious, and the vehicle then ran over and fatally injured a Congress volunteer; scenes of violence subsequently occurred in the neighbourhood and false rumours were disseminated to the effect that the volunteer had been intentionally slain. On the 30th, there was a further disturbance in Bombay. Among the other noteworthy incidents during the month was a disturbance in Belgaum on the 16th, and two serious outbreaks of disorder in rural areas, one in Buldana District (Central Provinces) on the 21st/25th, and the other, on the 20th, in Saran District (Bihar),—where a disturbance had already occurred during the previous month. On the 28th, two *chaukidars* were beaten to death by a mob in Midnapore (Bengal). Although the temporary set-back during this month was not very marked, it was sufficient to indicate the dangers that would arise were the vigilance of the authorities to be relaxed. In some places, particularly Bombay, there was an intensification of picketing, in others an increase in the number of political meetings. The no-revenue campaign in Gujerat continued to cause difficulty, which was increased by the migration of numerous revenue-payers into the adjacent territory of Baroda State; moreover propaganda in favour of a similar campaign in the United Provinces made appreciable headway during the month, and began to give the provincial Government some cause for anxiety; and there were indications that the trouble might extend to the Central Provinces as well. To check this development, an Ordinance had to be promulgated in the latter part of the month resuming the powers which had lapsed at the end of November for dealing with recalcitrancy with regard to revenue payments. In addition, it became necessary to obtain by Ordinance powers to renew control over the Press, owing to the marked deterioration which had taken place in the tone of

certain newspapers since the expiry of the Press Ordinance in the last week of October.

Throughout these six weeks activities of a terrorist nature continued. In November, bomb explosions near police quarters occurred in Bakarganj District (Bengal) and in Gujranwala District (Punjab) on the 16th, in Jessore (Bengal) on the 20th, and in Hyderabad (Sind) on the 28th. In December, on the 1st, a police inspector was shot dead at Chandpur railway station (Bengal), and a constable was killed and two police officials injured by firing in Cawnpore. On the 3rd, there were two bomb explosions in Delhi. On the 8th, an amazing outrage occurred in the Bengal Government Secretariat, Calcutta,—Lieut.-Col. Simpson being shot dead, and two other officials injured by three terrorists, all of whom then attempted to commit suicide, two of them with success. There were bomb explosions in Chittagong on the 10th, in Ahmednagar (Bombay) on the 13th, and in Sialkot (Punjab) on the 17th. On the 23rd, at the convocation ceremony in Lahore University, an attempt was made to assassinate the Governor of the Punjab, who was slightly wounded; and during the firing a member of the Women's Medical Service, who was in the audience, and two police officers were wounded, and one of the latter subsequently died. The other outrages committed during the month included bomb explosions at Delhi station on the 26th and in Ahmedabad on the 28th.

During the next nine weeks,—that is to say the period between the 1st of January and the 5th of March,—the situation definitely improved. Riots and disturbances were generally speaking not of a very serious nature, and the agrarian unrest which the Congress had fostered in the United Provinces did not appear to develop further. In many parts of the country, particularly the Madras Presidency and the Punjab, the Civil Disobedience Movement had by this time ceased to be a factor affecting the daily life of the people or causing any particular inconvenience to the ordinary district administration. On the other hand, the lapse of the Unlawful Intimidation Ordinance caused an intensification of picketing in some places, notably for a while in Calcutta, and the tendency,—which has already been mentioned,—of the Congress campaign to be accompanied by acts of violence increased. A number of unruly scenes occurred, particularly in Bombay,

Amritsar, Karachi, and Gujerat, in connection with the removal of foreign goods, and cloth godowns were burnt in various places. There was also a certain amount of destruction of property belonging to liquor licensees. On the 12th of February, in Amritsar, an attempt was made to murder a Hindu cloth merchant who had defied the picketers, and a similar outrage which was perpetrated the day before in Benares had very serious consequences. In this instance the victim was a Muslim trader, and the attack proved fatal; as a result, since Hindu-Muslim relations throughout most of Northern India were by this time very strained, a serious communal riot broke out and continued for five days, causing great destruction of property and numerous casualties. Among the other communal clashes during this period were the riots at Nilphamari (Bengal) on the 25th of January and at Rawalpindi on the 31st. Conditions in the Frontier Province became rather more disturbed between the end of December and the first week in March, and there were disorders in Peshawar on the 13th of January, and in Utmanzai on the 29th of that month and on the 21st of March. There were also several outbreaks of violence in Bengal and Bihar and Orissa. In the former Province, during January alone, attacks on the police were reported from eight Districts and acts of incendiarism from nine; while in Bihar, there was further trouble in Saran District on the 27th, and disturbances at Jhalda on the 15th, in Monghyr District on the 26th, and near Patna on the 28th. As regards the other parts of the country, Bombay was again the scene of numerous disturbances during January, those on the 12th and 16th being due to demonstrations held in honour of the men executed for the murders committed in Sholapur; the same cause was also responsible for disorders in Belgaum and Ahmedabad on the latter date. Rioting occurred near Allahabad on the 10th and 11th, and there was a disturbance in Mainpuri (United Provinces) on the 24th. In a clash between a mob and a party of police near Borsad (Bombay) on the 21st, some women demonstrators were injured. On the 26th,—"Independence day",—there was a disturbance in Calcutta. A *tehsildar* was murdered in Fatehpur District (United Provinces) on the 26th of February. These incidents however were noticeably sporadic in their occurrence, and it was evident that the movement had now lost its momentum. Outrages of a terrorist nature continued, but were not so frequent as in Decem-

ber. On the 8th of January bombs were thrown at a police station in Benares, and five days later a shocking tragedy occurred in Lahore, Mrs. Curtis, the wife of a military officer, being attacked in her bungalow and brutally murdered and her two children injured. An attempt was made to murder a police officer in Gurdaspur (Punjab) on the 4th of February, and on the 17th an attack was made upon Captain Barnes in Charsadda (Frontier Province) and there was a bomb explosion in Shahjahanpur (United Provinces). On the following day an explosion occurred in Lahore, and the police quarters in Asansol (Bengal) were burnt down. An unexploded bomb was discovered in the house of a police officer in Barisal (Bengal) on the 23rd, and on the 27th there was a shooting affray in Allahabad, C. S. Azad, a terrorist, being killed, and police officers wounded.

We must now describe the political reactions to the enunciation of policy made by the Prime Minister on the concluding day of the Round Table Conference in London. In view of the exceptional conditions prevailing here at the time, this statement may be said to have been very well received, particularly by the Liberals, and there is no question that it went a good deal further than many people had expected. And within a week it was followed by an announcement from the Viceroy which aroused intense interest. "In order to provide an opportunity for consideration of the statement made by the Prime Minister on the 19th of January", His Excellency declared, "my Government, in consultation with local Governments, have thought it right that the members of the Working Committee of the All-India Congress should be allowed full liberty of discussion between themselves and with those who have acted as members of the Committee since the 1st of January 1930. In accordance with this decision . . . notifications declaring the Committee to be an unlawful association . . . will be withdrawn . . ., and action will be taken for the release of Mr. Gandhi and others . . . My Government will impose no conditions on these releases, because we feel that the best hope of the restoration of peaceful conditions lies in discussions being conducted by those concerned under terms of unconditional liberty . . . I am content to trust those who will be affected by our decision to act in the same spirit as inspires it . . ." During the course of the next few days the members and ex-members of the Congress Working Committee were duly released,

and by the 1st of February were assembling for discussion at Allahabad. Shortly before they were set at liberty, however, the acting Working Committee of the Congress had passed a resolution defining their attitude towards the Prime Minister's statement, and although publication of this resolution was withheld owing to a telegram received from the Liberal delegates returning from the Round Table Conference, there was reason to suppose that it was of an uncompromising nature. The instructions issued to local organizations with regard to the celebration of "Independence day", at any rate, had been distinctly militant, and included statements calculated to incite troops and police to refuse to obey orders. Mr. Gandhi, however, on his release, had announced that he had come out of jail with an absolutely open mind and was prepared to study the whole situation from every point of view, and although it became known on the 2nd of February that he and his colleagues had decided against any immediate cessation of Civil Disobedience, this was expected, and attention was primarily concentrated on the attitude they would adopt in their conversations with the delegates returned from the Conference. Between the 8th and the 14th prolonged discussions took place in Allahabad between the Congress leaders and Sir T. B. Sapru, Mr. Sastri, and Mr. Jayakar,* and on the latter date the Working Committee authorized Mr. Gandhi to seek an interview with the Viceroy. When information was received on the 16th that the Viceroy would be willing to see Mr. Gandhi, the latter, accompanied by his immediate followers, proceeded to Delhi.

On various dates between the 17th of February and the 5th of March Mr. Gandhi had private interviews with Lord Irwin in the Viceroy's House, and there was eager speculation among the public concerning the basis upon which the conversations were proceeding, and the extent to which the Congress leader would be prepared to modify the demands made during the discussions with Sir T. B. Sapru and Mr. Jayakar in the previous August. It was believed that, in addition to pressing for the release of "political" prisoners, and the restoration of property and posts forfeited by his followers during the course of the Congress campaign, Mr. Gandhi would also urge that an inquiry

* H. H. the Nawab of Bhopal also had a conversation with Mr. Gandhi at this time.

should be held into "excesses" which it was alleged the police had committed in combating the Civil Disobedience Movement. Meanwhile, the reactions throughout the country to the release of the Congress leaders had been interesting and important. Generally speaking it would be true to say that the decision of the Government was well received, since it at least appeared to afford some prospect of relief from a state of affairs which was still the cause of much loss to the country. Supporters of the Congress, except possibly the most intransigent of them, were hopeful, as also were the majority of Liberals and others of definitely nationalist views. Among the minority communities, however,—particularly the Muslims and the Europeans,—there was far less enthusiasm, and the general opinion appeared to be that judgment should be suspended until the consequences of the Government's action could be more clearly foreseen. It was recognised that, were it possible to arrange for a discontinuance of the Civil Disobedience Movement on mutually satisfactory terms, the advantages would be substantial. But in view of the unreasonable attitude the Congress had adopted on numerous occasions in the past, and the nature of the demands to which it had recently committed itself, there was considered to be very little chance that the conversations now in progress in the Viceroy's House could be brought to a successful conclusion; while, on the other hand, the mere fact that they were taking place had noticeably increased the prestige of the Congress. Already, there had been a disposition on the part of the more exuberant of its supporters to interpret the unconditional releases of the members of the Working Committee as signifying a victory for their cause, and this view was held to be confirmed when their accredited leader was permitted to carry on protracted negotiations privately with the representative of the King-Emperor. There was thus good reason for those who had not been in sympathy with the Congress campaign to view the situation with some misgiving. The Muslims, as we have seen, had already been in a restive state before the release of the members of the Working Committee, and the added importance which the Congress seemed to be acquiring as a result of that event only increased their apprehensions of what the future might have in store for them; moreover among the delegates who had returned from the Round Table Conference were several who appeared to consider that the Muslim point of view had not been properly appreciated in

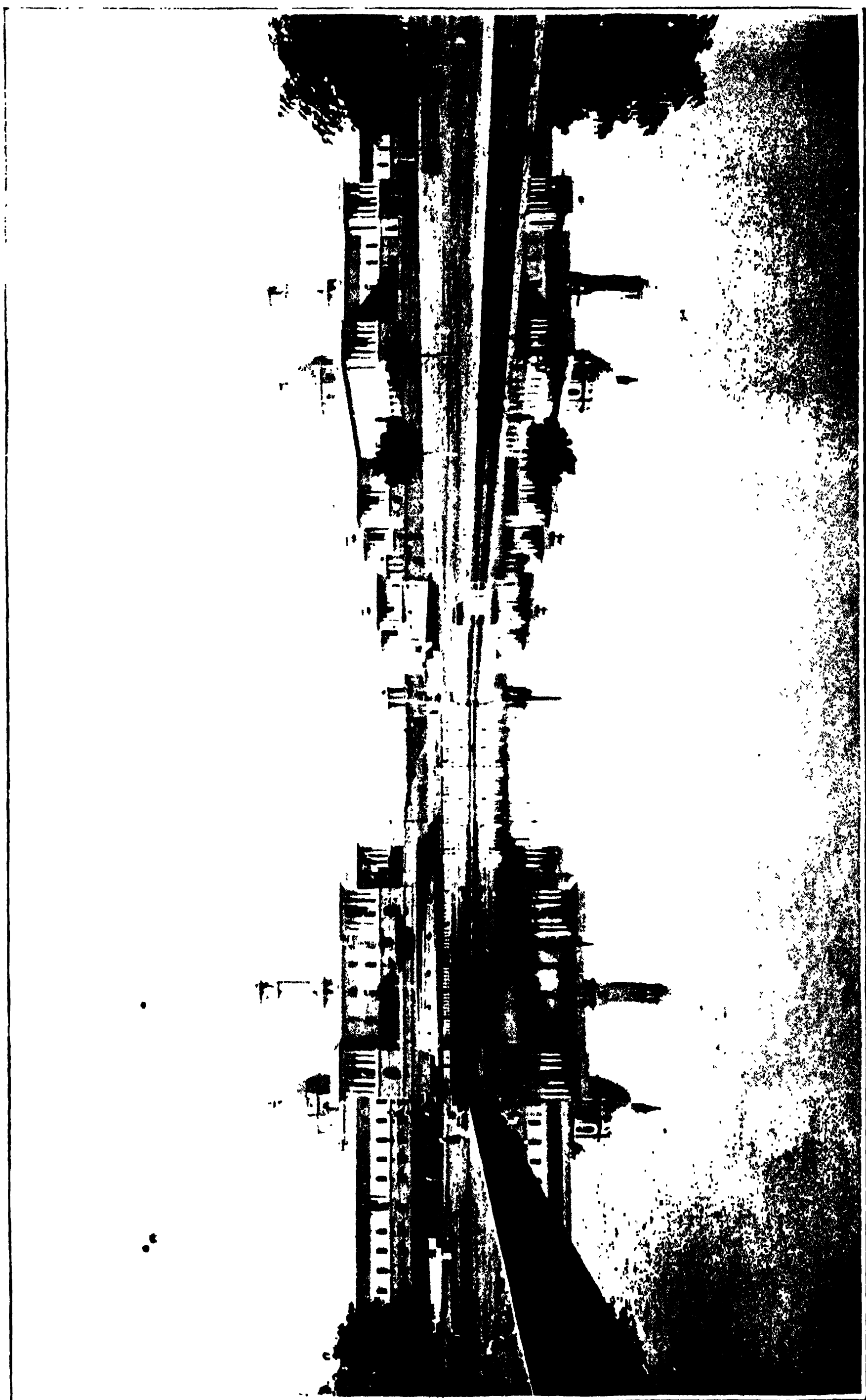
London. A question of more immediate practical application, to which importance was attached at this time, was whether, if some form of agreement were actually reached as a result of the conversations between the Viceroy and Mr. Gandhi, it would be found that the Government had acceded to the Congress demand for an inquiry into the conduct of the police. The prevalent opinion among supporters of the Government was that the attitude of the Congress on this point was distinctly disingenuous. As we have had reason to mention during the course of this narrative,—and as will be emphasized again in Chapter IX,—one of the most striking features of the Civil Disobedience Movement had been the staunchness, courage, and endurance which the police had shown, despite the insidious attempts which had been made to subvert their loyalty, and the perpetual vilification and abuse to which they had been exposed. During a period of unprecedented stress, they had, as a body, acted with great restraint. It was the Congress that had launched a campaign responsible for the disorders throughout the country which had necessitated preventive and executive action by the police. Where there was reason to suppose that the action taken had been excessive, local Governments had carried out inquiries in accordance with ordinary administrative practice, and the results of these enquiries had not affected the broad fact that the services rendered by the police in face of exceptional difficulties had been of an extremely high order. It was therefore considered that in demanding a general enquiry into their conduct the Congress was not only attempting to shift on to other shoulders responsibility for events which was primarily its own, but was in effect endeavouring to undermine the allegiance of the force to the Government in yet another way; for if the Viceroy and his Council could be induced to concede this point in order to secure a cessation of Civil Disobedience, the morale of the police would in all probability be so shaken as to render them far less likely, henceforward, to constitute an effective obstacle to Congress activities.

On the 4th of March it became known that, despite the grave doubts that had been entertained as to its possibility, an agreement had been reached as a result of the conversations between the Viceroy and Mr. Gandhi; and when, on the following day, the terms of settlement were published in the form of a Home Department notification, it was at once realized that there was little

justification for the apprehensions that had been entertained. "Civil Disobedience", the notification declared, "will be effectively discontinued, and reciprocal action will be taken by Government. The effective discontinuance of the civil disobedience movement means the effective discontinuance of all activities in furtherence thereof, by whatever methods pursued and, in particular, the following:—(*i*) the organised defiance of the provisions of any law, (*ii*) the movement for the non-payment of land revenue and other legal dues, (*iii*) the publication of news-sheets in support of the civil disobedience movement, and (*iv*) attempts to influence civil and military servants or village officials against Government or to persuade them to resign their posts". Two interesting clauses related to the question of the boycott. It was stated that, "as regards the boycott of foreign goods, there are two issues involved; firstly, the character of the boycott, and secondly, the methods employed in giving effect to it. The position of Government is as follows. They approve of the encouragement of Indian industries as part of the economic and industrial movement designed to improve the material condition of India ... But the boycott of non-Indian goods ... has been directed during the civil disobedience movement chiefly ... against British goods ... It is accepted that a boycott ... organised for this purpose, will not be consistent with the participation of representatives of the Congress in a frank and friendly discussion of constitutional questions between representatives of British India, of the Indian States, and of His Majesty's Government and political parties in England, which the settlement is intended to secure. It is, therefore, agreed that the discontinuance of the civil disobedience movement connotes the definite discontinuance of the employment of the boycott of British commodities as a political weapon .... In regard to the methods employed in furtherance of the replacement of non-Indian by Indian goods, or against the consumption of intoxicating liquor and drugs, resort will not be had to methods coming within the category of picketing, except within the limits permitted by the ordinary law. Such picketing shall be unaggressive and it shall not involve coercion, intimidation, restraint, hostile demonstration, obstruction to the public, or any offence under the ordinary law. If and when any of these methods is employed in any place, the practice of picketing in that place will be suspended." After this there followed a clause relating to the demands made by Congress

with regard to the conduct of the police. This was probably at the time considered the most important item of the whole agreement. " Mr. Gandhi ", the notification declared, " has drawn the attention of Government to specific allegations against the conduct of the police, and represented the desirability of a public enquiry into them. In present circumstances Government see great difficulty in this course and feel that it must inevitably lead to charges and counter-charges, and so militate against the re-establishment of peace. Having regard to these considerations, Mr. Gandhi agreed not to press the matter." The notification then proceeded to define the action which would be taken by Government as a result of the cessation of civil disobedience, in relation to such matters as the withdrawal of Ordinances and other special measures, the procedure to be adopted with regard to legal proceedings initiated in connection with the Congress campaign, and the arrangements which would be made concerning the imposition of fines, the forfeiture of property and of Government posts, and the stationing of punitive police in certain areas. These clauses were too detailed and technical to be reproduced here,* but among them was one which declared that " those prisoners will be released who are undergoing imprisonment in connection with the civil disobedience movement for offences which did not involve violence, other than technical violence, or incitement to such violence . . ." An interesting clause related to the question of salt, which, it will be recollected, had been made one of the chief points of controversy by the Congress at the outset of their campaign. It was declared that " Government are unable to condone breaches of the existing law relating to the salt administration, nor are they able, in the present financial conditions of the country, to make substantial modifications in the Salt Acts. For the sake however of giving relief to certain of the poorer classes, they are prepared to extend their administrative provisions, on lines already prevailing in certain places, in order to permit local residents in villages, immediately adjoining areas where salt can be collected or made, to collect or make salt for domestic consumption or sale within such villages, but not for sale to, or trading with, individuals living outside them." The notification concluded with the following remarks. " In the event of Congress failing to give full effect to

* The full text of the agreement will be found in Appendix III.



the obligations of this settlement, Government will take such action as may, in consequence, become necessary for the protection of the public and individuals and the due observance of law and order."

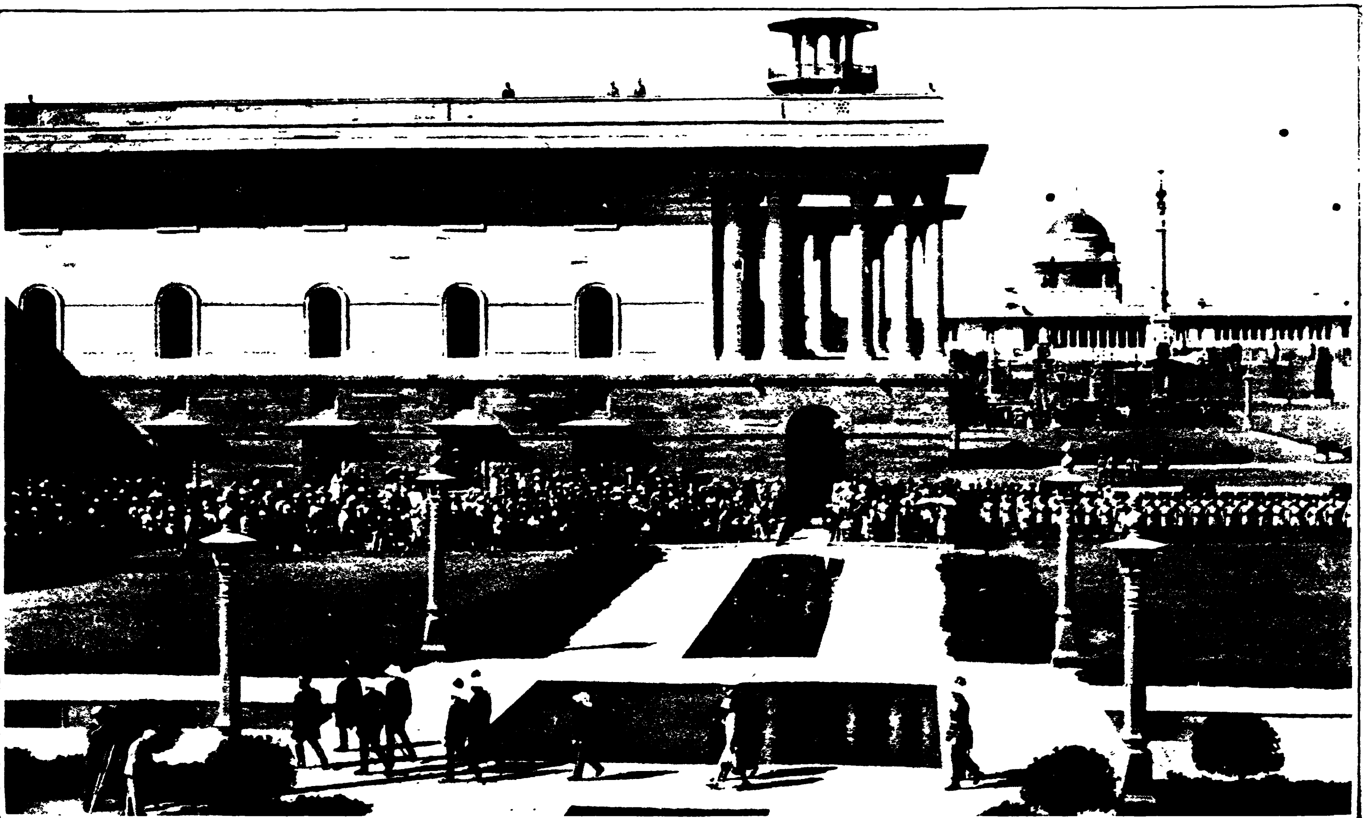
Meanwhile, since the 14th of January, the Delhi session of the Legislative Assembly had been in progress,* and we must devote some paragraphs to describing its proceedings before considering the consequences of the settlement effected between the Government and the Congress on the 4th of March. In the ordinary course of events, the most important business of the winter session of the Legislative Assembly, which usually lasts about ten weeks, is to deal with the Railway and General Budgets, and in previous issues of these Reports it has been our custom to describe the debates which have taken place on financial and other matters during the lengthiest of the two annual sessions in considerable detail. On this occasion, however, so much attention has had to be devoted to events that occurred outside the walls of the Legislature, that our account of the business transacted by the latter will have to be shorter and more selective. We propose in particular to deal much more briefly with the financial debates; for they occupy so many days, and are often of so technical a nature, that it is always difficult to summarize them satisfactorily in a Chapter devoted primarily to political and constitutional questions,—and in any case the larger part of the actual Budget statements will be found reproduced elsewhere;† moreover among the discussions which took place during this session on non-financial matters there were several of more than ordinary importance. In addition to this, the amount of space at our disposal is too limited to enable us to discuss the significance of some of the numerous Bills that were passed,‡ or certain resolutions, motions for adjournment and so forth that were brought forward.

* The Council of State did not meet until the 10th February.

† *vide* Chapter VI.

‡ As for example the Indian Ports (Amendment) Bill, the Punjab Criminal Procedure Amendment (Supplementary) Bill, the Cantonments (Amendment) Bill, the Indian Territorial Force (Amendment) Bill, the Auxiliary Force (Amendment) Bill, the Vizagapatam Port Bill, the Indian Naval Armament (Amendment) Bill, the Indian Income-tax (Amendment) Bill, the Indian Merchant Shipping (Amendment) Bill, the Gold Thread Industry (Protection) Bill, the Steel Industry (Protection) Bill, the Indian Factories (Amendment) Bill, the Salt (Additional Import Duty) Bill, the Indian Forces (Amendment) Bill, and the Wheat (Import Duty) Bill.

The first notable event of the session was the address delivered by the Viceroy to the Members of the Legislative Assembly on the 17th of January. In view of the fact that at this time the Round Table Conference was still in progress, and the Prime Minister's statement of policy had not yet been made, it was obviously impossible for His Excellency to refer to the constitutional problem except in very general terms, but he pointed out that certain consequences of the Conference were already clear. Among them, he stated, had been "the recognition by the Indian States of the essential unity of all India, and their readiness to take their full share in designing the instruments of government through which that conception of unity may gain concrete expression and effect. I do not underrate the difficulties that still have to be surmounted before these aspirations can be realized in their entirety. But those need not blind us to the far-reaching and deep significance of the step taken by the States' representatives in London. I scarcely think I exaggerate when I say that the historian a hundred years hence, commenting on these times, will find in it the turning point in the constitutional history of India." His Excellency also made some interesting references to the activities of the Congress. "A political movement", he declared, "must be judged and dealt with, not according to the professions of those who initiate it or carry it into effect, but in the light of practical results. Whatever may be, or have been, the true objects underlying the present civil disobedience movement, Government still sees in many parts of India determined efforts to substitute another authority for its own, and to interfere with the maintenance of law and order, of which Government is the constituted guardian ... It is not possible for Government to play the *rôle* of benevolent spectator, so long as those who have been endeavouring to destroy its foundations at every point show no sign of abating their activities"; and His Excellency then proceeded to indicate some of the measures that Government had considered it necessary to devise to deal with the situation, among which was a Bill designed to counteract the terrorist movement in Bengal. The address however concluded on a somewhat different note. "Many times during the last twelve months", Lord Irwin declared, "thoughtful men and women must have pondered deeply over what has been one of their most poignant and perplexing features. However mistaken any man may think him to be, and however



THE VICEROY'S ARRIVAL, DURING THE INAUGURATION CEREMONIES IN NEW DELHI.

deplorable may appear the results of the policy associated with his name, no one can fail to recognise the spiritual force which impels Mr. Gandhi to count no sacrifice too great in the cause, as he believes, of the India that he loves. And I fancy that, though he on his side too thinks those who differ from him to be the victims of a false philosophy, Mr. Gandhi would not be unwilling to say that men of my race, who are to-day responsible for Government in India, were sincere in their attempt to serve her. It has been one of the tragedies of this time that where ultimate purposes have perhaps differed little, if at all, the methods employed by some should have been, as I conceive, far more calculated to impede than to assist the accomplishment of that largely common end . . . Is it not now possible, I would ask, for those responsible for this policy to try another course that, in the light on the one hand of the sinister events in India, and on the other of the encouragement offered to India by the progress of the Conference in England, would seem to be the more excellent way?"

On the 19th of January, Sir James Crerar, the Home Member, made an important announcement of the Government's intentions with regard to two Bills of which notice had already been given, namely the Press Bill and the Unlawful Instigation Bill, which were intended to replace the Ordinances promulgated by the Viceroy shortly before the session began. "During the last day or two", Sir James Crerar declared, "it has been represented to me that the Prime Minister, on behalf of His Majesty's Government, is about to make a momentous announcement of policy which, it is hoped, will open up the prospect to all men of reason and goodwill of the possibility of the early restoration to India of conditions of tranquillity and confidence. It has accordingly been suggested that, without prejudice to any question of principle or policy, . . . this is not an opportune occasion for pressing debate on matters which must necessarily excite some degree of controversy. Having regard to the fact that the Ordinances afford present protection against the evils with which the legislation is designed to deal, Government do not desire to proceed immediately with the Bills." Although the Opposition forthwith claimed that the Government ought not only to have postponed discussion of the Bills but also withdrawn the Ordinances altogether, the Home Member's announcement certainly did much to create a comparatively peaceable atmosphere in the Assembly at the outset, and there was

probably only one occasion during the course of the session when the tone of the speeches on the major political issues of the time could be said to have been really bitter. This was in connection with a resolution brought forward by Shaikh Sadiq Hasan, and debated on the 29th of January and the 5th of February, which urged " the immediate discontinuance of the present policy of repression pursued by the Government and the adoption of a sympathetic and conciliatory policy ". Although it was admitted that, owing to the Prime Minister's statement at the Round Table Conference, and the release of members of the Congress Working Committee from jail, the situation had altered for the better since the resolution was drafted, a number of speakers urged that what the Government had done was not enough, and that all persons who had been imprisoned in connection with the Civil Disobedience Movement should be immediately released; there was moreover a regrettable tendency on the part of several members to make the debate an occasion for recrimination and abuse of the Government with regard to the methods it had adopted for combating Congress activities. In the end, however, the resolution was talked out. The only other debate during January that we can permit ourselves to notice was that which occurred on the 20th in connection with the Bengal Criminal Law Amendment (Supplementary) Bill. The Government found itself opposed during the discussions on this measure by a number of prominent members, including Sir Hari Singh Gour, Maulvi (now Sir) Mohammad Yakub,* and Dr. (now Sir) Abdullah Suhrawardy, and eventually the amendment moved by Mr. Abdul Matin Chaudhury, that the Bill be circulated for the purpose of eliciting opinion, was carried.

During February,—apart from two motions for adjournment,† and a discussion on the Code of Criminal Procedure (Amendment)

* Who had been President of the Legislative Assembly during the Simla session, but who had been succeeded, at the beginning of the Delhi session, by Sir Ibrahim Rahimtoola.

† The first of these was brought forward by U Tun Aung on the 12th, in connection with the action taken by the Government of Burma against the General Council of Burmese Associations, and was negatived. The second, which related to the summary trial and execution of one Habib Nur at Peshawar, was brought forward by Dr. Ziauddin Ahmad on the 24th and adopted. Habib Nur had been convicted and executed for the attempt to murder Captain Barnes to which reference has already been made. The attitude the House adopted in this matter was evidently due to the belief that the law relating to crimes of this kind in the Frontier Province required revision.

Bill on the 14th,—the most important events were the presentation of the Railway Budget on the 17th and the General Budget on the 28th, and the debates which took place on the former between the 19th and the 26th. As will be fully appreciated if the relevant portion of Chapter VI is referred to, the financial position disclosed by the Commerce Member, Sir George Rainy, in presenting his Railway Budget, was a serious one. But although there was a good deal of criticism, both during the general discussion on the 19th and while the demands for grants were being debated a few days later, of the Government's proposals for dealing with the situation, discussions of the Railway Budget, as compared at any rate with that of the General Budget, proved a comparatively simple matter. Apart from the general contention that it was based on too optimistic an estimate of the economic situation in 1931-32, and criticism of the attitude adopted by Government with regard to retrenchment and reduction in pay, the majority of the points raised by the Opposition were concerned with such matters as the Indianization of the railway services and the representation of the minority communities therein, the amenities provided for third-class passengers, the policy of the Publicity Department, the loss incurred on the strategic lines and so forth,—all of which had been discussed in connection with previous Railway Budgets and duly commented on in these Reports.

As regards the General Budget and the measures associated with it, the debates, as usual, covered an extremely wide field, and occupied so many working days, that for the reasons we have already explained, we shall not attempt, this year, to examine them in detail. The main lines of criticism however emerged fairly clearly during the general discussion on the 5th and 6th of March, and amounted to this,—that the country was unable to bear the imposition of additional taxation such as the Finance Member had proposed in order to meet the anticipated deficit, and that the reductions provided for in civil and military expenditure were inadequate. In addition, it was contended that some of the fresh taxes would be altogether undesirable in their nature and incidence, and that alternative sources of revenue should have been chosen. Among the many speeches made during the course of these two days, we may select for reproduction portions of that delivered by Mr. H. P. Mody on the 6th, since it gives a good indication of some of the points made against the

Government with regard to expenditure. "When Sir George Schuster comes forward", he said, "with a Budget which shows a huge deficit of 14 crores of rupees, and with proposals for taxation to that extent, I am sure he realises that he is likely to meet with a very stout opposition. The Finance Member claims that a whole-hearted attempt has been made to meet an abnormal situation. I am sorry to have to dispute that claim entirely. I say the Government are trifling with the problem. They have merely nibbled here and there and come forward with a few cuts which they think ought to satisfy the country. Take the case of the Military Budget. On a so-called reduction in the Military Budget to the extent of one crore and 70 lakhs, the Finance Member seems to base his claim that a whole-hearted attempt has been made. I say that it is camouflage. Leaving aside the very serious condition of the country, has any attempt been made to conform even to the recommendations of committees set up by Government themselves? What was the figure given by the Inchcape Committee in their carefully prepared recommendations? They suggested that it should be brought down to 50 crores. And it was stated definitely that the country could not afford that expenditure indefinitely. The same sort of opinion is to be found in Mr. Layton's Report. Apart from these two Reports, there is this supreme consideration, that there has been a substantial fall in the cost of living in the last two or three years. Has that fall been reflected in the Military Budget which has been presented to this House? I venture to think it has not. Coming to the civil side, all that I wish to say is that I welcome the announcement that a committee is going to be set up to regulate the terms and conditions of future recruitment. It is a matter which I pressed upon the attention of the Round Table Conference in the Services Sub-Committee, and my contention was more or less the same as I have just advanced, namely, that whatever the efficiency of the services may be, their maintenance at the present rate is a burden which the country can not finance. I am not making comparisons with the remuneration which public servants in other countries enjoy, but if such comparisons were permitted, I am afraid the result would be very unfavourable to the services in this country. While there is a disposition on everybody's part not to touch the emoluments of the present members of the services, I am certain that so far as future recruitment is concerned, we will have to revise those terms very

drastically. But apart from an inquiry into the terms of future recruitment, I would wish that a body of experts was brought out in order to find out whether the system of administration could not be simplified. In India a great many things are in a primitive stage. The only thing that has reached perfection is the elaborate and the routine-ridden system which is in force in this country. The administration seems lost in files and despatch boxes, reports and statistics. What we want is a system suited to the still somewhat primitive needs of India. After all India is just emerging from her sleep; her agriculture, her industries, her trade are still in a very poor stage of advance, and I think crores of rupees will have to be found in the future if India is to make of the great experiment of Dominion Status a success. If all this money is to be found, new ways will have to be devised, and while Government are considering the conditions of future recruitment, they might also consider whether the system of administration can not be simplified and brought more into accord with the needs of the people." Throughout the next week the House was occupied in discussing the demands for grants, and on the 20th, after four days' debate, the motion to consider the Indian Finance Bill was adopted. The actual debate on the Bill however proved unfortunate, for on the 25th an amendment was carried with relation to the increases in income-tax which, if brought into effect, would have deprived Government of about Rs. 2,40 lakhs of revenue. On the following day the Viceroy recommended to the Assembly an alternative amendment to the Bill which was designed to reduce the estimated revenue by Rs. 1,00 lakhs only, but the motion with regard to this was negatived on the 27th, and the Bill, in modified form, eventually had to be certified.

As regards the other events of the Session, the most important was probably the debate which was begun on the 2nd of March and resumed on the 7th, on the results of the Round Table Conference. It originated in a resolution which had been brought forward by the late Mr. K. C. Roy in an able speech on the 29th of January, when he had urged that papers concerning the proceedings of the Conference should be placed before the House as soon as they were available. A large number of speakers contributed to the discussions on these papers, and although there was a disposition amongst some of them to criticize certain of the decisions provisionally reached at the Conference, the general tone of the debate was ex-

cellent, and the majority of members undoubtedly were of opinion that the Conference had succeeded beyond expectations. The tendency towards an optimistic interpretation of the Conference proceedings was particularly noticeable on the second day of the debate, owing to the satisfactory conclusion of the discussions between the Viceroy and Mr. Gandhi three days previously. Among the points concerning which some adverse criticism was made were of course the "safeguards", particularly those proposed with regard to the Army and Finance, the latter being adversely commented on during the first day of the debate by Mr. Shanmukhan Chetty. A significant contribution to the discussions was shortly afterwards made by Mr. B. Das. "Many compliments have been paid to the Indian Princes", he declared, "and I am glad they have come into the picture. But I have not come to recognise how far they will be ornaments or active Members of the Federal Assembly. They say 'touch us not in our internal policy, we will come and criticise you'. One hundred of these Princes or their representatives will be so to speak nominated Members, and they will always be on the side of Government. There is also the question, whether the people of the States are going to get representation,—though I would concede that for the present they would be nominated as representatives of their State Governments. But then what will happen to those small States which contain a population of 5,000, 10,000 or 20,000?" Among the other incidents of the last month of the Session was an interesting debate on the proposed separation of Burma from India on the 17th, and two motions for adjournment in connection with communal riots, one of which was brought forward on the 21st and the other on the 30th. The origin and significance of these riots, and of the other administrative problems with which the Government was confronted during the remainder of the period under review, we may now proceed to discuss.

When the news of the settlement reached as a result of the conversations between the Viceroy and Mr. Gandhi was published, it was very well received throughout the country. Except for a portion of the left wing of the Congress, whose strength at this stage it was difficult to estimate, there appeared to be no important body of opinion that did not consider the fact that Civil Disobedience was to be terminated thoroughly satisfactory. Such misgivings as there were among supporters of Government related not to the actual

terms of the settlement, but to the good faith of the Congress in giving effect to them and to the danger that Congressmen would attempt to exploit the position for their own advantage. These apprehensions were particularly felt by Muslims. There was little criticism regarding such administrative concessions as had been made. The arrangement with regard to salt, it was believed, would have little, if any, deleterious effect on revenues; while since picketing, *per se*, did not constitute an offence under the ordinary law, it was difficult to see how the understanding reached on this point,—curious though it may have seemed to those who did not appreciate the technicalities involved,—could actually have been improved upon. Moreover, the Congress claim for an enquiry into the conduct of the police, to which so much importance had been attached, had not been allowed; no concessions likely to cause the local authorities serious embarrassment had been made with regard to property and posts forfeited as a result of the Congress campaign; and the cessation of Civil Disobedience, and the release of persons arrested in connection with it, would relieve both the Central and Provincial Governments of many difficulties and enable the impending constitutional changes to be discussed in a more tranquil and rational atmosphere. Among "moderates" of all schools of thought, particularly the Liberals, there was very real satisfaction at the prospect of comparatively normal conditions being restored throughout the country as a result of a reasonable agreement; and as regards the commercial community, even those Indian business men who had actively supported the Congress campaign had generally speaking by now become weary of incurring trading losses in the cause of politics, and were probably as pleased as any others that the period of conflict was over. Throughout the Congress organization as a whole the trend of opinion was more difficult to judge, owing to the fact that, at the time the settlement was made, so many of its members were still in jail. Undoubtedly a large number of Congressmen were tired of the struggle, and glad that an opportunity had presented itself for terminating it. But many of them, on emerging from prison, could not resist the temptation to claim the agreement as a Congress "victory"; while others, particularly those who had been associated with the various "Youth Leagues" and similar bodies, evidently considered the terms of agreement either altogether unsatisfactory, or else worthy of support only in so far as they provided Congress with the means of

reviving its anti-Government activities at a more auspicious moment. It was therefore uncertain, until the Congress had an opportunity of arriving at a definite decision, what its attitude towards the settlement would be. This opportunity was provided by the annual session of the whole Congress, which was to be held on this occasion at Karachi during the last week in March. The meeting, of course, in the ordinary course of events would have occurred in the previous December, had circumstances rendered that practicable. As soon as arrangements had been made for terminating Civil Disobedience, however, active preparations for the plenary session of the Congress were begun, and at first it seemed likely that the prestige Mr. Gandhi had acquired, as a result of his conversations with Lord Irwin, would enable him to override such opposition as might manifest itself during the proceedings, and induce the Congress to record its formal approval of the policy which he and the Working Committee had adopted.

By the middle of the month, however, a serious complication had arisen. The sentences on Bhagat Singh and two other men who had been condemned to death for crimes of a terrorist nature were soon due to be carried out at Lahore, and Bhagat Singh himself, as a result of the writings concerning him in the press and the speeches made on his behalf throughout the country, had by this time been exalted to the level of a national hero. The interest taken in his fate was so intense that it was widely believed that, if Mr. Gandhi failed to persuade the Government at least to commute the sentence, the temper of the Congress would be so roused that it would be impossible to secure its ratification of the Delhi settlement. On the 23rd, Bhagat Singh and his two companions, for reasons explained by the Viceroy in a speech in Delhi a few days later, were duly executed, and the intensity of the emotions which had been worked up over this case, even amongst those who were outside the Congress fold, was illustrated by the fact that, on the 25th, while crucial discussions on the Finance Bill were in progress, a large number of members of the Legislative Assembly walked out of the House as a protest against what had been done. But the excitement which had been engendered by this incident subsided with surprising rapidity. At Karachi, on the date when the executions were carried out, the delegates for the plenary session of the Congress were already assembling, and during the next few days the atmosphere was very tense. But the various

resolutions were methodically discussed and passed by the Working and Subjects Committees, and when, on the 30th, the one dealing with the Delhi Agreement came before the open Congress, it was passed without a single dissentient vote. Possibly the events which will be described in the next paragraph had some influence on this decision.

As we had reason to explain while discussing the last phase of the Civil Disobedience Movement, the relations between Hindus and Muslims throughout Northern India had markedly deteriorated during the first two months of 1931, and already, in February, there had been serious communal rioting in Benares. This state of affairs was due chiefly to the increasing exasperation created among Muslims by the paralysis of trade and the general atmosphere of unrest and confusion that resulted from Congress activities. In addition, the disappointment felt by certain Muslim delegates at the results of the Round Table Conference doubtless indirectly had some effect on the situation, and the increased importance which the Congress seemed to be acquiring as a result of the negotiations with the Government caused the community serious apprehensions, in view of the tyrannical and sometimes violent methods the supporters of the Civil Disobedience Movement had been adopting in order to enforce their wishes. The rioting in Benares, as we have seen, been directly due to the murder of a Muslim trader who had defied the Congress picketers. During March, the tension between the two communities, in the United Provinces at any rate, greatly increased. Between the 14th and 16th there was serious rioting in the Mirzapur District, and on the 17th, trouble broke out in Agra and continued till the 20th. On the 25th, when Congress workers endeavoured to induce Muslim shopkeepers in Cawnpore to close their premises in honour of the memory of Bhagat Singh, the Muslims resisted, and fighting thereupon extended throughout the city with extraordinary rapidity. For at least two days the situation was altogether out of control, and the loss of life and destruction of property was appalling. This communal riot, which need never have occurred but for the provocative conduct of adherents of the Congress, was the worst which India has experienced for many years, and the news of it created consternation among the delegates assembling at Karachi. The trouble moreover spread from the city to the neighbouring villages, where there were sporadic communal disturbances for seve-

ral days afterwards. There was also a communal riot in Dhanbad (Bengal) on the 28th, and in Amritsar District on the 30th, and in many other parts of the country at this time the relations between members of the two communities were so strained that clashes would have been inevitable but for the vigilance of the authorities.

Apart from the difficulties created by communal enmity, the administrative situation improved between the 5th of March and the end of the period under review. Releases of persons who had been convicted for offences connected with the Civil Disobedience Movement were accomplished satisfactorily, and the number of disturbances not due to communal causes was comparatively few. The only disorders requiring mention were those which took place in Guntur (Madras) on the 6th, in Etawah District (United Provinces) on the 12th, in Mymensingh District (Bengal) on the 14th, and in Tinnevelly District (Madras) on the 24th. There was also a diminution of outrages of a terrorist nature, the bomb explosions in police quarters in Krishnagar (Bengal) on the 17th being the sole conspicuous incident of this type during the month. Agrarian unrest continued to cause some anxiety, particularly in the United Provinces, but on the other hand the situation with regard to picketing and other activities associated with the Civil Disobedience Movement improved remarkably, particularly in Bombay. By the end of the month, when the settlement arranged in Delhi had been ratified by the Congress at Karachi, there seemed reason to hope that, in spite of the tendency on the part of some sections of the Congress to treat it as no more than a temporary truce, an era of comparative peace and goodwill was about to be inaugurated.

Hitherto, in discussing the political and administrative problems of the year, we have ranged at large throughout almost the whole of India, selecting incidents indifferently here and there as the development of our narrative required. We shall now change our method, and, before closing this Chapter, concentrate our attention exclusively on two Provinces,—the North-West Frontier Province, and Burma. In the former, it is true, events appeared to take approximately the same line as in the rest of India, but history indicates that the parallelism was largely fortuitous; indeed, for reasons which we have explained elsewhere, the Frontier Province has so many peculiarities of its own that to merge our account of what occurred there with the rest of our story would only blur its significance. This is even more true in the case of Burma; the

difficulties with which its Government had to contend in the latter part of the period under review were almost totally distinct, both in origin and nature, from those which confronted the authorities in other Provinces of the Indian Empire.

The Frontier Province differs essentially from the rest of India in the following respects, among others. Firstly, its importance from the military point of view is unique. Along its outer border lie the barren valleys and defiles through which almost all the major invasions of India in the past have been effected, and which still constitute almost the only routes whereby a hostile Power could attack India by land. Secondly, a large proportion of the inhabitants of the Province have less in common with the various peoples of the rest of India, either in history, language, or customs, than with the warlike and turbulent tribesmen who live just beyond the border. These points have already been elaborated in Chapter I. A further point, whose political implications are very important, is that an overwhelming proportion of the population is of the Muslim faith. In only two other Provinces of British India as at present constituted, namely the Punjab and Bengal, are the Muslims in a numerical majority over the Hindus,—but there the margins are small; and the Muslims in both these regions are acutely conscious, not only of the numbers, high standard of education, and political ability of the Hindus living among them, but also of the fact that in every other Province except one the Hindus are numerically predominant over their own co-religionists. In the Frontier Province, on the other hand, these considerations scarcely operate, since the Muslims are in a majority of over 14 to 1 over the Hindus. This leads us straight to the last point which deserves attention, namely the fact that, under the Montagu-Chelmsford Reforms, the amount of political freedom conferred upon the inhabitants of the Frontier Province was substantially less than was granted elsewhere. The reasons for this, of course, were largely military; but the comparative backwardness of the Province, from the constitutional point of view, has in recent years given rise to a good deal of dissatisfaction and complaint among the educated classes.

At the beginning of the year 1930 this latent political unrest was aggravated by agitation over the Sarda Act. The passage of this measure by the Central Legislature was described in our last Report. It was originally introduced, some years ago, as a

private member's Bill, applicable to Hindus only, and designed to prevent the solemnization of marriages between boys of under 18 or girls of under 14 years; subsequently, it was redrafted in the form of a penal Government enactment affecting all communities in India, and was duly passed by the Legislature in September 1930. Actually, child-marriage is a far less serious and extensive evil amongst Muslims than amongst Hindus, but it does on occasion occur; and when the Act was about to be brought into force, those whose interests lay in fostering the hostility to Government which was already developing in the Province, found little difficulty in exploiting the misunderstandings to which the measure had already given rise, and working up the more fanatical and ignorant members of the population into a state of great indignation about it. Throughout the first three months of the year demonstrations to protest against the Act were held in all Districts, and agitators widely represented that it constituted a direct attack on the Muhammadan religion. During April, very violent speeches advocating defiance of this new law were made in many places, and Maulvi Kifayat Ullah of Delhi actually solemnised the *nikah* of minor children at Peshawar with this object.

Meanwhile, the ground was being carefully prepared for the inauguration of the Civil Disobedience campaign in the Province, in accordance with the resolution passed by the Congress at Lahore during the previous December. At first it seemed that the advocates of the Congress cause would obtain little support, and the "Independence Day" celebrations on the 26th of January, which had been widely advertised, aroused no enthusiasm except to a limited extent in Peshawar. Numerous secret meetings of the local Congress Committee and Khilafat Committee had however been held in the town, and as a result of these the Khilafatists, very early in the year, definitely broke away from the policy of the All-India Khilafat Committee and declared themselves in sympathy with the Congress and the kindred associations which had been established in the Province by Abdul Ghaffar Khan of Utmanzai. It seems improbable that any such unorthodox decision would have been made, had not the members of the local Khilafat Committee been fortified by reflecting on the overwhelming numerical predominance of Muslims over Hindus within their own sphere of influence. But whether this is so or not, an alliance of this kind,

effected at a time when there was a good deal of latent unrest in the Province, was embarrassing to the Government.

Throughout January, signs of impending trouble multiplied. At a meeting organised in Peshawar by the Khilafat and Sadat Committees to protest against certain individuals having been nominated by the Government to membership of the Municipal Committee, a number of remarkably seditious speeches were delivered. At about the same time, a pernicious monthly magazine entitled the *Naujawan-i-Sarhad* made its first appearance in the city, and revolutionary literature began to be imported from India on a considerable scale. In some instances the ingenious expedient was adopted of circulating these pamphlets before their advertised date of publication, which rendered it very difficult for the authorities to deal with them. During this period Abdul Ghaffar Khan and his followers spent most of their time touring the villages around Peshawar, and the speeches he made were very cleverly adjusted to the understanding of his fanatical and credulous audiences. By presenting his political arguments in a religious guise, and encouraging an attitude of defiance towards the law, he soon secured a very substantial following from amongst the ignorant and excitable peasants. Throughout February and March these various subversive activities were intensified, and by the beginning of April, when the Civil Disobedience Movement was formally inaugurated throughout the rest of India, the Province was in an inflammatory state.

In the second week of April, a visit which a committee of Congressmen proposed to make to the Province, between the 18th and 21st, to enquire into the working of the Frontier Crimes Regulation, was successfully used as a means of accentuating the excitement which already prevailed. A group of local leaders, Abdul Ghaffar Khan being the most conspicuous among them, had organized beforehand a series of tours in the Districts to explain the intentions of the committee and collect subscriptions and material for it. On the 20th, an official order was issued prohibiting the committee from entering the Province. This was seized upon as yet another excuse for vilifying the Government, and passions in the Peshawar bazaars were so aroused that the local leaders decided that it would be worth while staging a mass demonstration to defy the authorities a few days later. The date selected was the 23rd.

Meanwhile the speeches made, and the pamphlets distributed, had become so violent in tone that it was decided that the most conspicuous agitators must be arrested, and on the morning of the 23rd orders were issued that the chief Congress workers in the city,—Syed Lal Badshah, Ali Gul Khan and Paira Khan,—together with Rahim Baksh Ghaznavi, some members of the Naujawan Bharat Sabha,—or Youth League,—and the editors of certain newspapers, should be taken into custody.

While the arrests were being made an angry crowd had been gathering in the Kissakhani Bazaar, apparently with the object of rescuing some of the prisoners from the police. The temper and size of the mob soon became so alarming that the Deputy Commissioner considered it advisable to call in the City Disturbance Column. Meanwhile, rioting had already broken out,—of the singularly savage type which is inevitable in a place like Peshawar, where so large a proportion of the populace is accustomed to acts of violence. On advancing into the scene of the disturbance, the troops were received with a hail of stones and bricks. A British despatch rider accompanying the Column was thrown from his motor bicycle and murdered by the mob, and one of the armoured cars was set on fire. By this time it was obvious that to get control of the situation by peaceful means was quite impossible, and fire was therefore opened by the troops. The state of affairs improved after a further detachment of troops had appeared on the scene, and by the afternoon authority had been more or less restored. The total number of rioters killed is believed to have been 20. In the course of the riots the Deputy Commissioner was hit in the face by a brick and rendered unconscious, and an Assistant Superintendent of Police was badly injured.

During the next day the city was fairly quiet, though the shops remained closed. But in the evening, when it was reported that two platoons of the 2/18th Royal Garhwal Rifles had refused to obey orders, the Chief Commissioner decided, after conferring with some of the leading men of the city, that it was advisable that all troops should be withdrawn to cantonments. Thereafter the situation rapidly deteriorated. Congress volunteers were enrolled in large numbers, and the work of the police was soon rendered almost impossible. A memorial to those who had lost their lives in the riots was erected in Kissakhani Bazaar, and every possible

means were adopted by the local Congress leaders for maintaining the populace in a state of violent animosity against the authorities. For several days the whole city was practically in the control of the Congressmen, and it became necessary to re-occupy it with troops. This operation was carried out without untoward incident in the early morning of the 4th of May. Some Congress leaders and a number of hooligans were then arrested, and the headquarters of the Congress Committee were searched. From this date onwards the situation steadily improved until the morning of the 31st, when there occurred a peculiarly unfortunate incident which has already been mentioned in Chapter I. Owing to the accidental discharge of his rifle by a British soldier, a Sikh lady, who was passing in a *tonga* at the time, was wounded, and both her children killed. This tragedy was responsible for a minor outbreak of rioting during the afternoon. Subsequently, however, no further disturbances occurred in Peshawar city itself during the period under review,—though the state of affairs was often extremely tense.

The Sulaiman-Pankridge Enquiry Committee, which was appointed by the Government of India to report upon what had occurred in Peshawar on the 23rd of April, recorded evidence on the spot between the 26th of May and the 3rd of June. The report, containing a detailed analysis of events, was published in July. A number of Congress sympathizers refused to assist the Committee in its work, and the All-India Congress Committee actually constituted a parallel committee of enquiry under the chairmanship of the former President of the Legislative Assembly, Mr. V. J. Patel. This body, however, was refused admission to the Province. It recorded some evidence in Rawalpindi, and its report was subsequently proscribed.

In the meantime, acts of lawlessness and defiance of authority increased with extraordinary speed, and organizations affiliated to the Congress gained greatly in prestige and popularity. The volunteers known as the *Khudai khidmatgaran*,—or "Red Shirts", owing to their distinctive uniform,—were enrolled in unexpectedly large numbers, particularly in the Charsadda and Mardan sub-divisions of the Peshawar District, and figured prominently in the innumerable anti-Government demonstrations which took place. Abdul Ghaffar Khan, it may be mentioned, after having held a series of mass meetings in and around Charsadda

during the third week of April, had been arrested there, with several of his supporters, on the same day as that on which the Peshawar riots occurred. The agitation in the Mardan sub-division gave rise, in May, to an extremely serious incident which has already been mentioned in Chapter 1. On the 25th, the local authorities had been unsuccessful in an attempt to arrest certain offenders at a place called Takkar, and these persons were thereupon escorted by a large and jubilant crowd of volunteers along the road towards Mardan. At Gujar Garhi the Assistant Commissioner of Mardan,—accompanied by the Assistant Superintendent of Police, some constables, and a small party of troops,—encountered this procession and stopped its advance. A complete deadlock then ensued, and when, after a while, the police were ordered to disperse the crowd with *lathis*, a fierce conflict took place, in the course of which the Assistant Superintendent of Police, Mr. Murphy, was brutally done to death. Subsequently, the village of Takkar was surrounded by police supported by troops, and, although the troops were fired upon from a distance while this operation was in progress, some persons believed to have been implicated in the murder were successfully arrested.

Of the four Districts in the Province other than that of Peshawar, Bannu was probably the most turbulent. Signs of Congress agitation in the rural areas of this District were conspicuous by the month of March. On the 16th, a meeting attended by some 500 persons was held in Kakki village, and some very objectionable speeches were delivered. Several Congress meetings and processions were also held in Bannu itself during the last week of the month. On the 8th of April, Ram Singh, a local Congress worker, was arrested, and in protest against this a crowd surrounded the city police station, destroyed the garden, and threw stones and mud at Europeans playing golf nearby. This incident will also be referred to in Chapter IX. The next day a turbulent mob attempted to accompany Ram Singh to the court, where his case was to be heard, but was successfully dispersed by police and Frontier Constabulary. On the 11th, an order was issued prohibiting the holding of processions and demonstrations in certain specified places, and in the evening two other local agitators were arrested. By the 20th, picketing of liquor shops had begun, and between then and the second week in May meetings and processions became more and

more frequent. During this period five men who had been arrested for gambling were wrested from the custody of the police by Congress workers. As the month of May advanced, it became clear that more drastic action on the part of the authorities was essential if disorder was to be checked. Accordingly, on the 14th, troops were posted at all the entrances to the city, to prevent the influx of roughs from the villages, and parties of civil police and Frontier Constabulary then entered the city and a number of arrests were made. As a protest against this, the Congress Committee organised a general *hartal* for an indefinite period, which, however, was abandoned on the 19th, when the situation began for a while to improve. But in July the agitation revived,—largely owing to events in the tribal areas to the North and West,—and on the 14th and 15th no less than 440 picketers were arrested, and the closing of the city gates was again necessitated. At the same time, in the rural areas, meetings at which the boycott of liquor and foreign cloth and the settlement of cases by *shariat* was advocated had become increasingly frequent, and at several of these gatherings a large proportion of the crowd carried arms, and the police reporters who were present were molested. In consequence, additional police had to be posted in the more disturbed areas, licensed arms called in, and mixed parties of police and military kept on patrol duty throughout large tracts of the District. During August, a *mullah* named Fazl-i-Qadir gained notoriety in the Hathi Khel Wazir region by organising a number of meetings at which unrestrained violence was preached to armed audiences, and when it became known that,—in defiance of the terms of an ultimatum that had been conveyed by Government to the Hathi Khel Wazirs, and which the *maliks* and the tribesmen had been equally anxious to comply with,—a demonstration was to be held on the 24th at a place within the Hathi Khel limits, about 15 miles from Bannu in the direction of Kohat, it was decided that troops should be sent to the scene, to deal with such eventualities as might arise. Accordingly, a force of 300 infantry, 100 Frontier Constabulary, and some police proceeded to the spot, and on arrival was informed that Fazl-i-Qadir intended to hold the meeting as arranged, but that subsequently he would march with his following to Bannu jail, where they would surrender themselves. What then occurred has already been referred to in Chapter I, and was briefly as follows. On moving

their positions, the Government force was suddenly fired upon by the *mullah's* supporters at close range, and Captain Ashcroft of the 6th Royal Battalion, 13th Frontier Force Regiment, and eight men of the Platoon under his command were killed, a further ten being wounded. In the fighting which ensued about forty of the enemy, including the *mullah* himself, were killed, another thirty or so wounded, and eighty taken prisoners.

In the Kohat District, the state of affairs was for a time nearly as serious as in Bannu. After the rioting in Peshawar, there was a surprisingly rapid intensification of Congress activity in the District, and on the 4th of May some exceptionally violent speeches were made in Thal by agitators from Kohat city. The situation was now considered so dangerous as to necessitate preventive measures, and in the morning of the 12th Kohat city was surrounded by troops while parties of police and Frontier Constabulary marched in and took some of the agitators into custody. The next day the police were withdrawn, but the city had to be re-occupied on the 16th owing to an intensification of picketing. Arrests were also effected in Thal at about the same time, and while the prisoners here were being removed the police were surrounded by an excited crowd of about 300 people; a platoon of troops however very opportunely arrived on the scene and what might have been a serious incident was averted. On the following day the police supported by military successfully secured those who had organized this demonstration. On the 21st, a number of arrests were also made at Darsamand, a border village, and some weapons were confiscated. By the beginning of June, Congress activity in Kohat District had practically come to an end.

In Dera Ismail Khan District conditions were also disturbed,—though to a lesser degree. In the city, the news of the riots in Peshawar gave a stimulus to Congress activity and picketing of liquor shops was started on the 29th of April. On the 2nd of May a complete *hartal* was successfully organized, and picketing continued throughout the month. On the 30th, action similar to that adopted with regard to Peshawar, Bannu, and Kohat cities, was taken in Dera Ismail Khan, and a number of arrests were effected. Later in the day some trouble occurred between the police and a procession of female picketers, in the course of which shots were fired at the police from the roofs of houses. The police returned

the fire and one man was wounded by it. Members both of the police force and the crowd were injured by stones and bricks. In order to avoid further clashes, certain portions of the city were enclosed by a cordon of police from the 18th of May to the 4th of June. Thereafter the situation improved, and from the 1st of July onwards the state of affairs in the city was practically normal again.

As compared with the four other Districts of the Province, Hazara District gave little trouble, and was practically free from all signs of Congress activity until May. *Hartals* were observed on the 2nd and 6th of the month, in protest respectively against the firing at Peshawar, and the arrest of Mr. Gandhi. On the 8th, two prominent Congress men at Haripur were arrested, and at a later date some sympathizers with the Congress were caught in the act of making overtures to a working party of the 2/18th Royal Garhwal Rifles at Abbottabad, wither the regiment had been sent after the deplorable incident which occurred at Peshawar on the 24th of April. Apart from these, no events of political importance took place in the Hazara District during the year.

What we have now said with regard to the five Settled Districts on the Frontier Province should enable the reader,—if he bears in mind also the paragraphs in Chapter I in which the hostilities along the border were described,—to understand how exceptionally complex and dangerous was the situation with which the authorities were confronted during the year. For a full nine months,—that is to say from March until December,—circumstances were such that any chance event, arising either from the disturbances within or the incursions from without,—or a combination of the two,—might have been sufficient to cause a disaster of the first magnitude. Probably at no time since British influence was first extended to the Frontier have conditions given cause for such acute anxiety as during the period under review.

We may conclude this Chapter by describing the remarkable events which were taking place in Burma during the fourteen weeks or so preceding the close of the period with which we are dealing. Just before the end of the calendar year, on the night of the 22nd of December, disturbances suddenly broke out in several villages near Tharrawaddy town, which is about 75 miles North of Rangoon. The causes of the serious and singularly intractable rebellion of which this proved to be the first incident are still somewhat obscure.

At first it was believed by some that the prevailing economic depression, and particularly the catastrophic fall in the price of rice, might be sufficient to account for it. But evidence rapidly accumulated that although the distress of the cultivators gave the movement impetus, its objects were more far-reaching than the mere redress of agrarian grievances, and were indeed essentially political.

The leader of the rebellion, it soon transpired, was one Saya San, who had been in turn *phongyi*, quack doctor, and fortune-teller. On two occasions he had been convicted for running lotteries, and was once tried for murder, but acquitted. There is reason to believe that he and his associates conceived the idea of provoking a rising, whose purpose should be no less than the complete overthrow of Government, as far back as 1928. The Tharrawaddy District appears to have been selected as the scene of the first outbreak owing to its peculiar reputation for lawlessness and unrest. For years past it has been a favourite resort of political agitators, and in 1927-28 it became notorious for a widespread "no-tax" campaign, which gave the authorities great difficulty and required strong measures before it could be suppressed.

The events on the night of the 22nd of December, although not on a very extensive scale, were alarming. Insurrection suddenly broke out in a number of villages to the South of Tharrawaddy town, and the mob raided houses for arms, murdered two village headmen and a Deputy Forest Ranger, and then set off in four parties for the town. The general idea was to attack the shop of Messrs. P. Orr & Sons, the gunsmiths, and secure arms and ammunition, to attack the jail and release the prisoners, to attack the police station and treasury, and to destroy railway bridges on either side of the station, and cut telegraph and telephone wires. These ambitious plans however miscarried owing to one of the parties failing to arrive at the time arranged; but a small party of civil police, which was sent out from the town when news concerning the murders in the villages was received, encountered a party of rebels over 400 strong and was forced to retire. On the night of the 23rd, a small railway station named Inywa, on the other side of Tharrawaddy town, that is to say to the North, was attacked by a number of rebels, who succeeded in destroying the telegraph instruments; they also burned several

houses in the village and murdered a Chinese and two Indians. The next day Mr. Fields-Clarke, a forest engineer, was murdered while on tour at We-ywa. On the 25th December news was received that a large force of rebels had attacked a party of 50 military police at Pashwegyaw, and the report gave the impression that the police had broken and retreated in disorder. Later information did indeed show that this was not the case, and that the police had managed to inflict severe casualties on the enemy before being forced to retire owing to lack of ammunition; but it was clear, by this time, that the outbreak was on a much larger scale than had at first been supposed,—the rebel force apparently consisting of between 2,000 and 3,000 men armed with 30 guns, some rifles and a large quantity of ammunition. Accordingly, it was felt advisable to request that all available military police, together with troops, should forthwith be despatched to Tharrawaddy town, and they duly arrived there on the 28th. For some days before this, the inhabitants had naturally been considerably alarmed by the turn which events had taken, but the appearance of reinforcements did a great deal to restore confidence.

Information had meanwhile been obtained from some of the rebels whom Government forces had captured that their leader really was the notorious Saya San, and that he had a " palace " in the forest about 12 miles East of Tharrawaddy. The 3/20th Battalion of Burma Rifles was therefore despatched to investigate this site, and after a long march through difficult country they reached and attacked it on the afternoon of the 31st. During the action 17 rebels were killed, but the remainder, who had been warned of the advent of troops by pickets they had stationed at the foot of the hill, succeeded in making off into the jungle. The entire rebel camp was then destroyed by the troops before they withdrew. Since it was now known that the insurrection owed a good deal of its strength to a superstitious belief, on the part of the insurgents, that charms had rendered them invulnerable, it was hoped that so unfortunate an encounter as this, in which what appeared to be their headquarters had been destroyed, and several of their men killed, would be sufficient to bring the whole outbreak to an end. But this, it proved, was very far from being the case. Fresh recruits were readily found by the instigators of the movement from among the credulous and ignorant peasantry in other areas,—and

were duly tattooed and provided with the insignia supposed to make them immune from the ordinary perils of war. The tattooing usually took the form of the *galon*, which is equivalent to the *garuda* of Hindu mythology,—a fabulous bird said to have destroyed the *naga*, or snake, emblematical of the foreigner. On the strength of these tattoo marks the insurgents were frequently described as the "Galon Army".

The next rising occurred on the 4th of January about 275 miles North of Rangoon, in Yamethin District, through which runs the main railway line to Mandalay. This outbreak appears to have been brought about by a *phongyi* who had recently moved there from Tharrawaddy, and who it seems was only one of many agents acting under the orders of a central organisation. He managed to enrol between 40 and 50 recruits, and obtained arms by making raids on the surrounding villages, during the course of which, unfortunately, a police constable was killed. Prompt measures were however taken by the District authorities to deal with these disorders, and the whole gang of rebels, including the leader, was rounded up within two or three days of the outbreak. This swift action proved decisive, and despite the disturbances which took place elsewhere there was no further serious trouble in this particular area.

On the 7th of January a far more serious insurrection occurred at Dedaye, in Pyapon District, which had evidently been carefully prepared beforehand by Saya San, the leader of the original Tharrawaddy rebellion. The District authorities were fortunate in receiving news of the impending trouble before it actually occurred, and a party of military police was actually on its way to the region from which the reports had emanated when the revolt broke out; otherwise, the situation might have been very difficult to deal with. Practically all the inhabitants of four or five villages in the extreme South-East corner of the District, close to the sea, participated in this rising. The locality, however, was distinctly less favourable to the rebels than the Tharrawaddy District had been, owing to the comparative absence of thick jungle. Moreover, although the military police, on arrival, were met by a large and defiant mob of rebels estimated to have been about 700 strong, it was soon apparent that they had practically no firearms and were relying almost entirely on the use of *dahs* and spears. This, however, did not

deter them, since they were convinced of the invulnerability conferred upon them by the tattoo marks and other charms provided by their leaders, and they forthwith advanced in a solid phalanx against the police. When warnings from the latter proved of no avail fire was opened on the mob, and actually had to be maintained intermittently for an hour and a half before it was sufficiently brought home to the insurgents that their tattoo-marks and other paraphernalia did not render them proof against modern firearms. Their retreat disclosed 30 or 40 dead bodies. The police then advanced into the jungle and within a few days the entire rebel force had been rounded up. Of the 600 or so who were arrested only 103 were sent up for trial, the remainder being considered to have played too unimportant a part in the rising to require this attention.

Henzada, the District which lies on the West bank of the river Irrawaddy, immediately opposite Tharrawaddy, was the scene of the next outbreak. Since the two Districts are intimately connected, historically and ethnologically, trouble in Henzada had been anticipated from the moment when the original Tharrawaddy rebellion occurred over eight weeks before. But the rising was disconcerting in that it took place in the middle of the District, instead of along the Eastern border, and consisted in two separate attacks on the same day, one by a party 300 strong on the Township Officer, and the second by a party 50 strong on the Assistant Township Officer, both of whom happened at the time to be touring in different areas. The actual date of these occurrences was the 21st of February. The Township Officer, who was at Dodan village, collecting revenue with a small party of civil police, gave repeated warnings to his numerous assailants, but as they persisted in advancing against him issued orders to the police to open fire. Six rebels dropped dead, but as further rebel reinforcements had meanwhile been arriving on the scene the party was forced to beat a retreat to Tabingon village. The Assistant Township Officer's party was attacked at Hmandan village, and was also compelled to open fire, as a result of which the leader of the rebel gang, and two of his 50 followers, were killed; the remainder thereupon fled. A third engagement took place three days later, when the District Superintendent of Police and his men were attacked by about 200 rebels at Kyinnachan village and inflicted considerable casualties

upon them, eight men being killed and six others wounded and captured. The rebels however thereupon broke up into small decoit gangs and began pillaging the neighbouring villages, which they continued to do intermittently until well after the conclusion of the period under review, keeping out of sight of Government forces throughout. The state of affairs in Bassein District also caused considerable anxiety at about the time of the Henzada outbreak, but the prompt action taken by the District authorities was effectual in averting what might have been another serious rising.

Before February drew to a close the authorities undertook a careful review of what had occurred since the third week in December. The conclusion they reached,—which was proved correct by subsequent events,—was that the course of the rebellion resembled very closely that of similar outbreaks in the past, and would probably continue to do so;—that is to say, that the rebels would persist in avoiding collision with the Government forces except where they could surprise them or otherwise get them at a disadvantage, and that the chief danger, at this stage, was that the insurrection would degenerate into a multitude of dacoities and other minor outrages in which local bad characters from all over the disturbed areas would participate. If this were so, conditions in the Tharrawaddy and Insein Districts would be much as they had been at the time of the annexation of Upper Burma. In any case, it was felt that, although the insurrection had by this time brought about the complete breakdown of the ordinary administrative machinery in several Districts, the problem henceforward was one which the police could tackle better than the military. Accordingly it was decided that the whole region, some 800 square miles in extent, in which signs of disaffection had appeared, should be divided into 16 areas, in each of which would be posted a mixed civil and military police party under a European officer, whose object should be to attack the rebels whenever possible, prevent outrages, arrest dacoits, restore confidence among the villagers, and enable the workings of the administrative machine to be restored to normal.

Very shortly after this scheme was put into operation the forces of Government had some remarkable successes. On the 19th of February an attack made on the police post at Zaingthwe in Tharrawaddy District by a large gang of insurgents was decisively repulsed, 35 rebels being left dead on the field and many others

wounded. The rebels thereupon set off Southwards to Insein District, but arrangements were made to counter this move. On the 25th of March they attacked the small police outpost at Kinpadi, which had been assailed by rebel bands before, but were successfully beaten off after they had suffered heavy losses, several dead men being left in the field of action. On the same day the District Superintendent of Police of Insein District, and an Officer of the 2/15th Punjabis, obtained information from a rebel who had been wounded during the Kinpadi attack and subsequently captured, from which they were enabled to deduce where the camp of this large body of insurgents was at the moment situated. Arrangements were made accordingly, the camp was duly discovered and surrounded, and in the action that ensued nearly 100 rebels were killed, including two important leaders named Han Tha and Saya Sa.

This affray, amounting almost to a battle, which occurred just before the conclusion of the period we have under review, helped to check the spread of the rebellion in Insein District; but outbreaks continued to occur in other parts of Burma during 1931, although in the latter part of the year they were markedly less frequent and serious.

If the extent of the territory involved, and the aggregate size of the rebel forces are taken into consideration, the number of casualties suffered during the rebellion on the Government side, up to the end of March 1931, was small. One Deputy Superintendent of Police was killed in action, a Forest Officer was murdered, and an Army Officer, a Civil Surgeon, a Forest Officer, and a Subedar of Military Police were wounded. In addition, about 49 subordinate officers and men of the Civil and Military Police were killed and about 88 wounded during the course of the disturbances, and there were also several murders, particularly of the subordinate officers and men of the Forest Department. Many village headmen were also murdered, it being part of the policy of the rebels to render administration and the collection of revenue impossible. A number of Government forest houses were burned down by rebels, and the general destruction of property was substantial. On the rebel side, the casualties inflicted by the end of October 1931 are estimated to have amounted to about 3,000 killed and wounded.

As regards the causes of the rebellion, these, as we have said, are still somewhat obscure. It was at least a strange coincidence that the outbreak should have occurred at the very time when the question of separating Burma from India was up for consideration at the Round Table Conference in London. But the implications of this contemporary political factor, although they should not be ignored, must not be over-emphasised; for the rebellion had numerous precedents. The past history of Burma provides several instances in which sudden insurrections such as this have been successful in overturning the established administration and placing a new dynasty in power, and there have apparently been prophecies current in the country of late years that the throne of the King of Burma will soon be regained. It must also be borne in mind that despite the high standard of literacy that prevails among the Burman peasants,—at any rate in comparison with those of India,—they are still extraordinarily ignorant and credulous, a fact which is well attested by the pathetic and widespread belief, among those who participated in this particular rising, that charms and tattoo marks would confer invulnerability upon them. They are also, by nature, of a peculiarly volatile and excitable disposition. Apart from all this, the acute economic depression was in itself quite sufficient to account for a good deal of unrest during the period under review. All classes of cultivators were very hard hit by the extraordinary collapse of the paddy market,—the price per 100 baskets, which has averaged over Rs. 150 throughout the post-war period, having declined rapidly during the year to a minimum of about Rs. 65, a figure substantially lower than any that has been known within the memory of living man. In such circumstances, the preachings of itinerant *phongyis* and agitators against the Government would in any case have found a large number of ready listeners, and on this occasion it appears that many of them were working under the instructions of some central organisation, and were specifically directed to pay particular attention to villages in which certain objectionable political associations have recently been established.

A curious concomitant of the rebellion was the occurrence of murderous attacks on Indians in certain districts. This, no doubt, was in part a consequence of the deplorably savage riots between Coringhi and Burman labourers in Rangoon during the previous

May, which have already been mentioned, and which will be described in some detail in Chapter IX. The acute agrarian distress was also to some extent responsible for it; for such of the Indians resident in Burma as do not belong to the relatively prosperous class of money-lenders and small merchants, but themselves cultivate the soil, have as a rule a lower standard of living than the Burman peasants, and this, in bad times, is liable to be conspicuous and to excite indignation. But these immediate causes are scarcely sufficient in themselves to explain the number and savagery of the anti-Indian outrages that occurred. The sudden revival of ancient Burmese myths and superstitions in connection with the rebellion, and in particular the fact that the insurgents selected the *galon* as their emblem, would appear to indicate that antipathy to the foreigner in Burma is deep-seated and general; and to the ignorant cultivator the Indian not only appears quite as alien as the European, but being in more direct contact with him, is a more natural object of hostility.

CHAPTER III.

Some Fundamental Problems: Geography, Climate, Population, Agriculture, and Industry.

The title and structure of this Chapter requires some explanation. Last year, the fourth Chapter of our Report was entitled simply " Agriculture and Industry ", and the larger part of the present Chapter will be found to resemble it fairly closely in substance and arrangement. But since the conclusion of the period dealt with in our previous volume, an event has occurred to which the general public, obsessed as it naturally is, both in India and Great Britain, with the political and administrative difficulties of the time, has hitherto given far too little attention. That event was the decennial Census, which took place here on the 26th of February 1931. Unfortunately, there are so many other subjects of more immediate interest clamouring for our attention, that we cannot devote as much space to considering the consequences of this extremely important operation as we would wish; and apart from that, a considerable proportion of the figures, at the moment of writing, have not yet been worked out in detail. But no review of the year 1930-31 which failed to mention the fact or indicate the significance of the Census could be considered complete. The problems suggested by such returns as are at present available are indeed fundamental; and for the philosophic student of human affairs, if not the politician, they provide even more food for thought than the exceptionally dramatic and unusual events which were recorded,—unemotionally, as befits an official publication,—in our last Chapter.

A properly conducted Census nowadays is of course very much more than a mere numbering of the people. It is indeed a scientific survey of the most comprehensive type, conducted on approximately the same lines as a survey of the *flora* or *fauna* of a particular tract of country would be. Practically every attribute and activity of the inhabitants of the geographical unit investigated which is capable of being treated statistically comes within its scope, and for months, indeed years afterwards, the Census officers are occupied in classifying and interpreting the results obtained. For instance, the influence of geography and climate



MOUNT PANDIM NEAR DARJEELING.

on the growth or movements of the population is considered, as also that of disease, of war, of migration, and of social customs such as the age of marriage; in addition, the extent of unemployment, and of literacy, the standard of wealth, the nature of the occupations followed, and the trend of the birth and death rates, not only among the total number of inhabitants of the area concerned, but also among individual groups and classes of them, are all examined and described. These are only a few examples chosen at random, but they are sufficient to indicate the magnitude and extent of the population surveys now undertaken by all well-administered States throughout the world.

In considering the implications of the recent Census in this country,* we may start with geography. India is a wedge of land projecting Southwards into the ocean from the main mass of the Asiatic continent, and is separated from it by the most stupendous and impassable mountain barrier in the world. Being as it is a mere appendage of Asia, its size tends to be under-estimated, especially on maps drawn on Mercator's projection, which magnify Northern and Central Asia at its expense. Measuring about 1,900 miles both from North to South and from East to West, its total area including Burma is about 1,800,000 square miles, and is therefore much the same as that of the whole of Europe excluding Russia.

The main mountain range to the North is shaped like a Gurkha *kukri*, with the blade facing Southwards; and from the gorge of the Indus to that of the Brahmaputra, 1,400 miles away, it forms a practically unbroken watershed whose average elevation is not less than 19,000 feet, and which rises in places to peaks whose height is unequalled in any other part of the world. From the tip of the blade, up in the North West, a subsidiary range runs Southwards to the sea, and contains peaks as high as 11,000 feet; but it is notched and broken up by a series of fairly easy passes which until two or three centuries ago formed India's chief means

* An explanation is required at this point. Various Government *communiqués* on certain aspects of the Census have now been issued, but the time required for the examination of all the returns is so great, that Vol. I of the Census Commissioner's report will, it is estimated, not be published before 1933. The following pages however have been approved by the Census Commissioner, and have been written with reference to the draft of the first Chapter of Vol. I of his report. Actual extracts from this draft are indicated by quotation marks.

of communication with the outside world, and also the means whereby she was subjected to wave after wave of invasion by the nomadic peoples from the *plateaux* of Central Asia. From the handle of the *kukri*, at the Eastern end of the Himalayas, another subsidiary range stretches Southwards, separating Assam and Bengal from Burma. The last Province, in its turn, is separated from China, Annam, and Siam, by a further range of unfrequented jungly mountains along which its outer frontier runs.

The mountainous land barrier formed by the Himalayan range and its subsidiaries is one of the three geomorphic units into which Nature has subdivided the Indian sub-continent. The second is the great Indo-Gangetic plain, which stretches uninterruptedly from Baluchistan to the borders of Burma, and is the richest and most populous portion of the country. Three great river systems water it, two of which, those of the Indus and Brahmaputra, originate in the great Central Asian plateau behind the Himalayas, whilst the third collects most of the drainage of their Southern slopes. The larger part of this immense plain is alluvial, and until comparatively recently, in the geological sense, is believed to have been a sea of considerable depth, which was filled by *detritus* washed down from the North after the Himalayas were formed in Miocene times.

The third geomorphic unit is the truly peninsular portion of India, consisting of an extensive and geologically very ancient triangular table-land tapering Southwards, at an average elevation of about 2,000 feet. The junction of this triangle with the Indo-Gangetic plain in the North is distinguished by a confused range of mountains which once formed a substantial obstacle to communications between the peoples of Northern and Southern India. At its Eastern side the plateau descends to the Bay of Bengal in a series of irregular spurs and ridges known as the Eastern Ghats. On the other side, the Western Ghats,—an abrupt mountain range rising here and there to as much as 8,000 feet—stands like a wall above a narrow strip of flat coastal land facing the Arabian Sea.

Considerable climatic diversity is already suggested by these elementary geographical facts. But the mere structure of the land is far from explaining the extreme variations which do in fact exist. There is for instance the question of latitude. From South to North, India extends through 29 degrees,—that is to say from typically tropical regions to far within the temperate zone. Cape

Comorin, the apex of the peninsular triangle, is only 8 degrees North of the Equator, and thus stands at about the same latitude as the African Gold Coast, while the extreme Northern tongue of the Frontier Province, up against the Pamirs, is further North than Cadiz, in Spain. Distance from the sea is another factor. The climate of most of the peninsular portion of India is typically oceanic,—the changes of temperature between day and night, and between season and season, being therefore comparatively small,—whilst the Indo-Gangetic plain, and the immense arch of mountainous land enclosing it, is subject during the greater part of the year to equally typical continental conditions, resulting in a dry atmosphere and sharp variations of temperature. Thus in January the average thermometer-reading in the plains of the Punjab is about 30° F. lower than in the Southern part of the peninsula, and frosts at night are frequent, while during May and June, in the neighbouring region of Sind, shade temperatures as high as 125° F. occur, which is a figure never approached in tropical India. Yet another factor is rainfall. European readers, having heard that the South-West monsoon, which extends over India about midsummer, is in comparison with their own rain-bearing winds so regular in its arrival and duration, are prone to assume that the amount of moisture it discharges over the country is uniformly distributed. Actually, this is very far from being the case. Not only are there, from year to year, very great local variations in the annual rainfall, but in addition, throughout the Northern part of the country, the humidity of the monsoon currents decreases progressively from West to East. Accordingly, while large tracts of Sind and Rajputana frequently get less than 5 inches of rain a year, places in Assam are occasionally treated to well over 500.

Thus although it is of simple outline, and subject practically throughout almost the whole of its immense area to the regular monsoon winds, India contains nearly every extreme of nature that the tropical and temperate zones between them can produce;—mountain ranges of unexampled height and grandeur; reeking delta swamps of fantastic size, clothed with rank vegetation and dissected by innumerable shifting creeks; vast tracts of pathless hill country and virgin jungle; great open plains, traversed by correspondingly great rivers, where the eye ranges unimpeded round the level circle of the horizon, over a landscape which may be

all green luxuriance and fertility, or as sterile as the sandy wastes of Arabia; temperate regions where terraced hillsides yield reluctant harvests of wheat and other Northern crops; regions of stone and cactus, where the heat is the heat of a furnace, but intermittent; regions of perpetual steamy warmth, where rice and cotton, jute and coffee and palms, grow with tropical exuberance on soils of exceptional fertility. And presiding over the whole of this variegated scene, and profoundly affecting it, is the fierce Indian sun, which only relaxes its oppressive rule where the far Northern frontiers rise to meet the lasting snows.

That this physiographical multiformity should be reflected to some degree in the inhabitants of so large a tract of land is to be expected, but not, *a priori*, that the range of racial, cultural, religious and linguistic differences should be substantially greater than it is, for example, in Western Europe. Yet this is so, despite Europe's geographical intricacy,—its numerous islands, complicated little mountain ranges, and contorted coast-line,—which makes it appear in the map a far less coherent unit than India. The explanation is to be sought partly in the series of invasions which India has undergone from peoples of very varied types since the dawn of history, and partly in the peculiar social institutions which certain of her invaders have built up.

The original inhabitants of the country, it would seem, were probably of Negrito type, akin to the existing aborigines of the Andaman Islands and certain jungle tribes of Malay. But few traces of them now remain in India itself. At a very early date they appear to have been overwhelmed by races who may be described as proto-Australoid. There is reason to suppose that these people actually stabilized their racial characteristics in this country, but later invasions have been so numerous and diverse that it is not possible to speak with assurance on the point; their purest surviving descendents nowadays are probably the Veddas of Ceylon. Of these later invasions,—if we exclude those of the Mon and Mongolian races who have left their mark on the peoples of North-Eastern, Northern, and Upper Central India,—practically all appear to have come from the direction of the present Afghan Frontier. The reasons for this, which are purely geographical, have already been indicated in this Chapter, and were discussed in detail in Chapter I. The first immigrants after the proto-Australoids are believed to have been the peoples of Mediterranean



SNOWY RANGE, FROM BHUTIA BUSTI.

type who imported the Dravidian languages, and introduced the beginnings of culture, art, and crafts. Subsequent invasions have tended to press these peoples into the Southern portion of the country. The next immigrants, it would appear, were those who brought with them a knowledge of the city life of Mesopotamia or Asia Minor, and established the elaborate civilization whose remains have recently been discovered in parts of Sind and Rajputana. How remarkable and extensive this culture was we shall see in Chapter VIII; but during the second millenium B.C., it was overthrown by the invading Aryan warriors whose use of horses, and of iron weapons in warfare, enabled them to destroy the cities of the North-West and establish themselves as a powerful aristocracy. After them at varying intervals of time, there followed the numerous other conquering races whose deeds are chronicled in history;—Greeks and Bactrians under Alexander and his followers in the 3rd and 2nd centuries B.C., Scythians and Yueh-chi shortly before the beginning of the Christian era, Huns in the 5th and 6th centuries A.D., the immense hordes of Semitic and other peoples of the Muslim faith who streamed in during the 10th, 11th, and 12th centuries A.D., and finally the Moghuls in late medieval times. In addition, apart from the fact that the Europeans who have entered India during the last 400 years have to some extent intermingled with the original population, a considerable proportion of the inhabitants of the West coast owe their culture if not their blood to other peoples, of non-European origin, who have come to the country by sea. This is true, for example, of the original "Syrian" Christians, of the Moplahs, of the Black and White Jews, and to some extent of the Parsis; and many small communities along the coastal districts of the Bombay and Madras Presidencies are probably the direct descendents of the Arabian and African pirates who ravaged these shores over a period of several centuries before the arrival of the Portuguese.

Thus as compared with Western Europe,—where the majority of the inhabitants are of the Christian faith and of two or three stocks only, fairly uniformly fused into a common type,—India, with her multiplicity of peoples and beliefs, is a land of extraordinary diversity. And such natural fusion, both racial and cultural, as might have been expected to occur, even amongst peoples so various in origin, during the time at their disposal, has been to a large extent frustrated by a combination of peculiar social and reli-

gious institutions, of which, of course, the caste system is the most important. Any haphazard collection of Indians grouped together for Census purposes will therefore contain a quantity of widely different types, whose respective numerical representation will change in accordance with the locality that is selected; and the variations which will be found in culture and method of life are at least as remarkable of those in physique,—ranging as they do from people whose intelligence and traditions are of the highest quality to others such as the Kadars and Uralis of Southern India, who are still primitive savages, and exist by hunting and collecting forest produce without even having learnt the arts of agriculture. Yet another cause of diversity is language. Until comparatively lately it was not generally understood that the tongues in use throughout India are not only more numerous than those of Europe, but are much more varied in etymological structure; but the researches of Sir George Grierson and his followers have demonstrated that the linguistic problem in India consists of much more than a mere distinction between the major vernaculars of the more populous regions such as Telugu and Tamil in Madras, or Marathi and Gujarati in Bombay. The total number of living Indian vernaculars was shown by the Census of 1921* to amount to 222, and their differences in origin and construction are such that no less than five fundamentally different root tongues are represented among them. The majority of these vernaculars are of course restricted in use to small numbers of people; but the number of well-developed languages which are widely employed, and may be considered to be the true counterparts of the great languages of Europe, such as English, French, German, or Italian, is nevertheless large. There are at least 20 distinct tongues in use throughout the country each of which is spoken by over a million people; and twelve of them,—namely Hindustani, Bengali, Telugu, Marathi, Tamil, Punjabi, Rajasthani, Kanarese, Oriya, Gujarati, Burmese, and Malayalam,—are each used by more than seven million people.

Having indicated some of the basic facts with which an Indian Census is concerned, we are in a position to consider the 1931 returns

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* Unfortunately, at the moment of writing, complete returns for language from the 1931 Census had not been received, and the 1921 figures must suffice to illustrate our point. But obviously no radical difference between the 1931 and 1921 figures is to be anticipated.

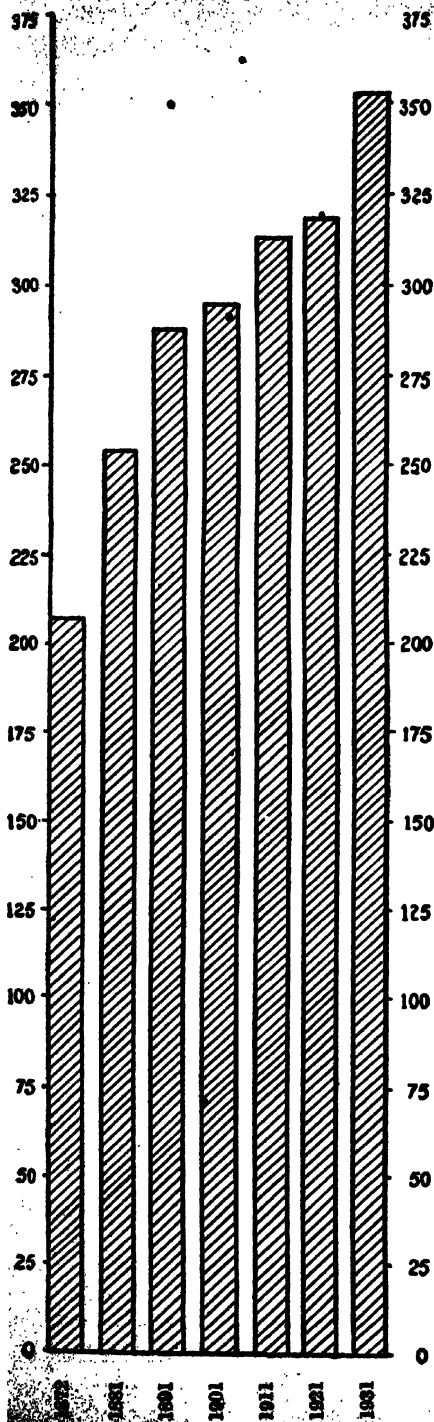
and their implications in detail. The area covered by the sixth general Census was practically identical with that covered by the fifth, in 1921, and comprised " the whole Empire of India, with Burma and the adjacent islands and islets (exclusive of Ceylon and the Maldives), as well as Aden "; Sokotra and the Kuria Muria islands however were not visited. This total area amounted to about 1,800,000 square miles, and its population was returned as 353,000,000 as against 319,000,000 in 1921. The density of population for the whole area worked out at 196 persons per square mile, as against 177 ten years previously. This figure however is not of much significance in itself, since " density is a very variable factor, appearing at its lowest as 6·5 persons per square mile in Baluchistan and at its highest at about 4,000 per square mile in the most thickly populated of the rural parts of the South West coast; the general density of the whole of Cochin State including both the thickly populated coastlands and the almost uninhabited highlands ", amounts to as much as 814·2 per square mile. Generally speaking, variations in density are found to correspond pretty closely to variations in rainfall. In the most thickly populated areas, namely Cochin, Eastern Bengal, the North-East corner of the United Provinces, and Bihar, the average rainfall is heavier than in any other parts of India except Assam and Burma; and in Assam, large tracts of hills and forests reduce the population in proportion to the area, while in Burma not only are there also numerous uninhabitable regions, but a good deal of room exists for farther settlement.

The increase recorded during the period under review was probably the most substantial real decennial increase that India has ever experienced. An advance of 11 per cent. in ten years is in itself startling enough, but it becomes vastly more so when it represents an addition of 34,000,000 persons to the country's population—that is to say of only 6,000,000 less than the total existing population of France, and of considerably more than the populations of such countries as Spain, Poland, or Austria. A few comparisons may enable the reader to appreciate this fully. As against India's 353,000,000 inhabitants, the United States is believed, according to recent calculations, to contain 125,000,000 people, Russia 147,000,000, China—on the basis of Professor Willcox' recent estimate—342,000,000, and the whole of Europe, exclusive of Russia, about 375,000,000. If it is correct that the

total population of the world amounts to 1,849,500,000, as recent computations indicate, then that of India now represents little less than one-fifth of it. As regards the rate of increase, as contrasted with its magnitude, comparisons are more difficult to make, since corresponding figures for the larger geographical units of the earth's surface are not readily available. In Western Europe the rate of increase is now small, that of Sweden, for instance,—a country whose vital statistics were comparatively unaffected by the consequences of the European War,—having amounted during the decade 1920-30 to but a fraction over 3 per cent., as against India's 11 per cent. It should however be borne in mind that in other parts of the world,—Eastern Europe for example,—the increases are generally considerably larger, and amongst Oriental countries figures such as that now registered in India have in recent years been by no means exceptional. The corresponding percentage for the outer islands of the Dutch East Indies, for instance, amounts to no less than 26, while that of Java is 20 and that of Ceylon 18.

Turning now from foreign comparisons to a more detailed consideration of the Indian figures themselves, we find, among the more striking facts of the 1931 Census, that the population of the Indian States has been growing more rapidly than that of British India. In 1921, the population of the former was 71,939,187 and in 1931 it was 81,237,564, the corresponding figures for British India being 247,003,293 and 271,749,312; while, therefore, the increase in British India has been at the rate of 10·02 per cent., that in the States has amounted to 12·9 per cent. Since the average density of population has hitherto been markedly less in the States,—the figure being 101 persons per square mile in 1921 and 114 in 1931, as against corresponding totals of 226 and 248 in British India,—this development might be held to indicate that the capacity of the latter to maintain a larger population is becoming exhausted, and that pressure on the margin of subsistence,—or at any rate on that of cultivation,—is now very acute. Within certain limits, which will subsequently be described, this interpretation may be justified. But it should be observed that in Travancore, where there was an increase of no less than 27·2 per cent. in the population, the density was already quite exceptionally high, whilst the increase in Bikaner, which was the greatest of all,—namely 42 per cent.,—has been due chiefly to a rapid extension of irrigation and a consequent influx of new cultivators from outside the State boundaries.

THE POPULATION OF INDIA SINCE 1872.



IN MILLIONS.

Reasons for Increase of Population.

Period	Increase due to		Real Increase of Population.	Total.	Rate per cent of Real Increase.
	Inclusion of New areas.	Improvement of Method.			
	Millions.	Millions.	Millions.	Millions.	
1872—1881	33·0	12·0	3·0	48·0	1·5
1881—1891	5·7	3·5	24·3	33·5	9·6
1891—1901	2·7	·2	4·1	7·0	1·4
1901—1911	1·8	...	18·7	20·5	6·4
1911—1921	·1	...	3·7	3·8	1·2
1921—1931	·0	...	34·0	34·0	10·6
Total	43·3	15·7	87·8	146·8	30·7

Again, the increase of 15·8 per cent. in Hyderabad is perhaps attributable to greater efficiency in the actual technique of census-taking, and cannot therefore be adduced in support of the conclusion suggested.

In the ordinary course of events, "the greatest increase in population might naturally be expected to occur in areas such as Burma, where the rainfall is above the mean and the density of the population below it". In most regions of this nature, proportionate increases have occurred. In Burma itself, for example, the increase amounted to 11 per cent.,—and in Assam, and Ganjam (Madras), where conditions, in this particular respect, are not dissimilar, there were increases of 13 and 11·3 per cent. respectively. Moveover in several tracts where precipitation and density were already evenly balanced, that is to say where the actual rainfall was considered barely adequate to support the former population,—as for example in the Southern Punjab, Eastern Rajputana, the United Provinces, and Central India generally,—improvements in irrigation have reduced the likelihood of crops being totally lost owing to drought, and, if scarcity or famine do occur, their effects are now less severe than they used to be, owing to better communications. In these regions, therefore, the population can expand closer to the margin of subsistence without noticeably ill effects, and in most of them has done so. In the Punjab, for instance, increases of 40 and 32 per cent. respectively were recorded in Montgomery and Multan Districts. There was an increase of 26 per cent. in Bahawalpur State. Sailana and Rutlam States in Central India recorded increases of 30 and 25 per cent. And in the Jhansi and Agra Districts of the United Provinces there were increases of 14 and 13 per cent. Again, although it is true that the increase in certain very densely populated areas, such as Cochin and Travancore, has actually been greater than in some regions of sparse population such as Baluchistan or Jaisalmer State,* this does not appear so surprising when the figures are examined in greater detail. In Travancore, for example, it is not in the most but in the least populous and fertile areas that the increase has been greatest. This State consists of three distinct regions,—the lowlands, the midlands,

* In Cochin and Travancore the densities were 814 and 668, and the percentage increases 23·1 and 27·2 respectively; while Baluchistan and Jaisalmer, with densities of 6·5 and 5, recorded percentage increases of only 8·6 and 12·7.

and the highlands, the fertility of whose soils varies in that order, those of the highlands being naturally the poorest. Now while, in 1921, in the first, second, and third of these regions, the density of population per square mile was 1,403, 700, and 53 persons respectively, in 1931 it had risen to 1,743, 892, and 82, the increases being 24·3, 27, and 54·7 per cent. respectively. Similar tendencies can be traced in other parts of the country also. In Bengal, for example, the total increase for the Province amounted to 7·35 per cent., and the increase in the Chittagong hill tracts to 23·06 per cent. Similarly, in the Madras Presidency, an increase of no less than 33·8 per cent. was recorded in the Nilgiri hills, as against an increase of 11·9 per cent. for the area as a whole. Where, therefore the population is already dense, there is,—as commonsense would indeed lead one to suppose,—a distinct tendency for it to spread to the less profitable land.

As has already been indicated, in respect of Bikaner State, the larger part of " the increase of population has been dependent in some cases on migration; while, on the other hand, the apparent increase may have depended on the failure to migrate. Thus the increase of 35 per cent. in Ahmednagar District, a rather barren upland in the Deccan which suffers from recurring famines, is due not so much to a series of good years or an extension of cultivation, as to trade depression, which resulted in numbers of the population staying at home instead of migrating to the ports of Bombay and elsewhere where in normal years they are employed." Doubtless the relative decrease in Bombay itself is in part at least related to the increase in Ahmednagar and similar places.

Probably the most important result of the Indian Censuses is the information they yield concerning the birth rate and the death rate, and the relation between them. As regards the birth rate, a minor but remarkable feature of the 1931 returns, which we should deal with before approaching the main point we wish to make, is the light they throw on the curious differences that exist between the fecundity of various castes and sections of the community. How far these differences should be attributed to the effects of environment, or of inherited racial traits, or of certain social customs, it is as a rule difficult to say. Perhaps the most interesting of them is that between the average birth-rate of the Hindus and of the population as a whole,—the former being the lower. The gap is indeed far less than several others which this and pre-

vious Censuses have revealed, but it is quite noticeable, and the fact that the Hindus constitute substantially the largest part of the population renders it particularly important. No doubt it is partly explained by the Hindu practice of discouraging the re-marriage of widows, since as a result of this a considerable number of Hindu women are forced to remain unproductive during a large part of the child-bearing age; in addition, child-marriage is more customary among the Hindus than among other sections of the community, and is certainly responsible for a good deal of abortion and sterility. But the outstanding point to be emphasized with regard to the Indian birth rate is, of course, not the varying prolificacy of different sections of the community, but the extraordinarily high level of the rate as a whole. For example as against rates of 30·1, 19·0, 17·9, 17·7, 16·3, and 15·2, which were recorded in 1929 in the Argentine, New Zealand, Germany, France, England and Wales, and Sweden, the rate in British India during the same year was 35·5. Amongst several factors which can be adduced in explanation of this,—other than the obvious one of a relatively low standard of living,—the most important is the Indian practice with regard to marriage; for not only is the married state generally considered essential rather than optional, but it is entered into, if not during childhood, at any rate very shortly after puberty,—"the Parsis being perhaps the only community in which late marriages and small families are the rule rather than the exception". In consequence, if we exclude widows, practically every individual member of India's enormous population is in a position to propagate throughout the whole period of life during which he or she is physically capable of doing so.

This brings us to the point at which it is necessary to consider the death-rate; for it is obvious that the customs we have described, if their natural consequences were not counterbalanced by a high rate of mortality, would have caused an increase in population beside which the astonishing rise which has in fact occurred would appear insignificant. When, however, we take as examples the same six countries as we did in respect of the birth rate, namely France, the Argentine, England and Wales, Germany, Sweden, and New Zealand, we find that whereas their respective death rates in 1929 were 18·0, 13·6, 13·4, 12·6, 12·2, and 8·8, the corresponding figure for British India was 25·9. The causes for

this astonishingly high rate are partly climatic and partly social. Among the former, the chief is the prevalence of a variety of serious diseases, whose nature and incidence will be discussed a few pages hence, and again in further detail in Chapter VII. Among the causes that may be classified as social, the most conspicuous are the variety of grossly unhygienic habits and practices that result from the poverty, ignorance, and superstition of the majority of the population, and the existence of certain peculiar customs such as the marriage of children and the segregation of women in *purdah*. The evils of child marriage have been referred to in previous issues of these Reports and need not be emphasized here. As regards *purdah*, its ill-effects are numerous, and particularly so " among the poorer classes of Muslims, who appear to be more rigid on its observance than the corresponding class of Hindus. This effect is particularly noticeable in crowded urban areas, in which the space available to a woman in *purdah* and poor circumstances is so small as to seriously affect her health ".

But despite the tendency of all these factors,—and of others which would have been enumerated but for the limitations of space,—to reduce the number of the inhabitants, they have proved even less effective than before in counterbalancing the effects of India's exceptionally high birth-rate. In many respects the decade prior to 1931 " was exceptionally favourable for an increase in population. It is true that the influenza epidemic at the end of the previous decade is believed to have fallen most seriously on the most productive ages and should therefore have had a much more lasting effect than famine, which takes the oldest and youngest first ". On the other hand, however, no epidemics greater than those with which the country has always been afflicted occurred during the decade, and the extension of medical facilities undoubtedly caused a slight but definite improvement in public health; in particular, the mortality from diseases such as cholera and *kala-azar* has now been substantially reduced owing to the discovery of new methods of prevention or treatment, which we shall describe in Chapter VII. The period too, " was a prosperous one in the matter of crops, the general economic depression which has supervened having been little apparent outside one or two restricted areas until 1931 itself . . . As regards scarcity, improvements in communications and consequently in the ease of distribution nowadays prevent anything like the

famine mortality of a century ago". As a result of all this, India is now, as we have indicated, confronted with the fact that her population has increased by 34,000,000 in the last ten years, and is now larger than that of any other country in the world.

Obviously, so enormous an increase in an already vast population has some very unpleasant implications. We cannot pretend, in a volume of this kind, to discuss these exhaustively, but a few general reflections are permissible. "Recent writers on the population question in India, *e.g.*, Wattal and Ranadive, have directed attention primarily to the question of food production. Their argument is that the population of India is already living permanently on the verge of scarcity, and any increase is bound to result in an insufficiency of the food supply. Recent experience, however, throws doubt on this theory. The general slump in the price of food, and the difficulty found by cultivators in selling their produce, suggest that the danger of a shortage of the food supply is not the most serious aspect of the question . . . It would seem that the point has not yet been reached at which the ability of the country to feed its occupants is seriously taxed." Possibly the workings of the law of diminishing returns may bring us to this point sooner than we have reason at present to expect; and the fact must in any case be borne in mind that the "maximum population possible is very far from identical with the maximum population desirable", since an increase up to the absolute margin of subsistence in India would have a deplorable effect on a standard of living which is already shockingly low.

But in essence the problem raised by the 1931 returns appears to be not so much one of food-supply as of employment. "The ability of agriculture to provide an occupation is necessarily limited. In Europe, it has been estimated that the maximum population which can be supported by agricultural occupations is 250 persons to the square mile, while an estimate of somewhat higher density has been made in the U.S.A., and the island of Porto Rico in the West Indies has an agricultural population of nearly 400 to the square mile. The number is, as we have seen, very much greater than this in many parts of India, and a rural population which attains the extraordinary density mentioned in respect of parts of Cochin State shows the extent to which fertile land extensively cultivated, together with fish-yielding waters, can sustain a population whose material wants are reduced

to the minimum by the natural environment of a tropical climate." This is of course an extreme case, but it is certainly possible for the average density of the agricultural population in India to be very much greater than in Europe, owing to the greater productivity of the land and the less rigorous climate. The real difficulty which is already encountered here, and which is likely to become increasingly acute, arises when the number of individuals working on the soil passes its natural economic maximum. Such a maximum must exist for every area of ground, though it will, of course, vary greatly according to local conditions. When it is passed, one of two things must occur,—either the area is excessively subdivided, and its productivity consequently reduced, or else there is brought into existence a large " floating population which is not engaged in agriculture and which has nothing to exchange with the producers for the food it requires. The employment of this surplus in industrial activities would, of course, meet the difficulty for a time " if the industries existed; but even so it should be borne in mind that to deflect the superfluous cultivators into industrial pursuits would only constitute a permanent cure if their number remained below the saturation point of the industrial demand. As soon as it ceased to be so, the unemployment figures would inevitably rise, " as in the United Kingdom—where the increase in population during the last decade is approximately equivalent to the number of unemployed in 1931 ". In such circumstances the fact that the food-supply is adequate, or even excessive, does nothing to restore the situation to normal. In India, therefore, where industries are as yet comparatively undeveloped, the problem revealed by the last Census would appear to arise " less from the increase in the total population than from the increase in that part of it,—by far the largest,—which is occupied in agriculture and its allied pursuits ". It may be remarked, moreover, that the problem is rendered more difficult by the poverty of the cultivators, who, as we shall explain a few pages hence, generally have not the capital necessary either for extending cultivation beyond its present limits, or for procuring improved appliances,—particularly in those parts where agriculture is rendered a speculative undertaking by a scanty and variable rainfall.

" It appears to be the general opinion of Indian economists who discuss the population problem of this country that the only practical method of limiting the population is by the introduction

of artificial methods of birth control." But how this practice can become widely established in a country where the propagation of male offspring is considered a religious duty, and barrenness a retribution for crimes committed in a former incarnation, it is difficult to see. In India, as elsewhere, there has indeed recently been a marked increase in the demand, among certain classes, for scientific knowledge on the subject, and the movement appears to be distinctly "less hampered by misplaced prudery than in some countries which claim to be more civilized. Not only is artificial control advocated by a number of medical writers, but Indians can now boast of a Neo-Malthusian League with two Maharajas, three High Court Judges and four or five men very prominent in public life as its sponsors". But such interest as is displayed in these matters is inevitably confined almost entirely to the educated classes, and the practical effects on a population of 353,000,000 of whatever artificial restriction is actually practised must be almost *nil.* Meanwhile, until the use of this method becomes so extensive as to yield appreciable results, little can be done. Some authorities have been forced to the conclusion that the only alternative means of checking the present rate of increase would be by relaxing the efforts to reduce the infant mortality rate; and despite the extraordinarily beneficent work which is performed in the child-welfare and maternity centres,—which will be described in Chapter VII,—the purely scientific arguments which can be adduced in support of this view are substantial. At any rate there seems to be a good deal to be said in favour of arranging that in maternity clinics, and during the course of "Baby Weeks", instructions in birth control should be provided. "A move in this direction has already been made by the Government of Mysore State, which in 1930 sanctioned the establishment of birth control clinics in the four principal hospitals of the State."

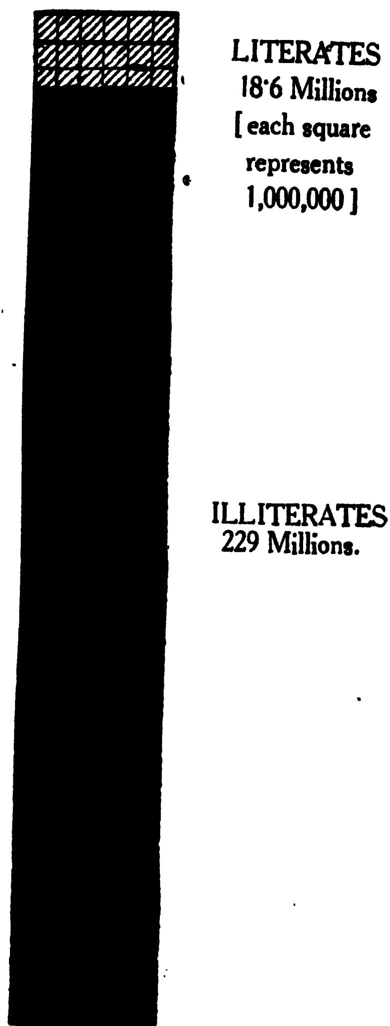
Apart from artificial restriction of this kind, there is, theoretically, one other way in which an excessive increase in population can be prevented. "It has been clearly demonstrated in Europe that a rise in the standard of living is normally accompanied by a fall in the birth-rate, and the same principle no doubt operates in this country." Nevertheless it is important to realize that, to have this effect, the rise in the standard must be substantial. A mere increase in the food supply, among the poverty-stricken masses who constitute the vast majority of the Indian population, might easily

have a contrary result, by encouraging them to breed right up to, instead of to some degree short of, the subsistence level. "In order that a higher standard of living may affect the rate of reproduction it is apparent that not only is an increase in education and culture involved, but also a psychological appreciation of a higher probability of survival." But this latter factor could scarcely operate in India under existing conditions.

But the number of interesting reflections suggested by the latest Census returns is almost limitless, and the space at our disposal, owing to the claims made upon it by matters of immediate administrative importance, is very small. Next year we hope to have opportunity for considering some further aspects of the 1931 figures. We must now direct our attention to the subject which will hold it throughout the larger part of this Chapter,—namely Agriculture. As we have already indicated, the great majority of the inhabitants of India are engaged in agricultural pursuits, but readers in Great Britain sometimes fail to appreciate how radically the functional distribution of the population here differs from that in their own and similar countries. A few figures will assist. Throughout the Indian sub-continent there are 35 towns which contain 100,000 persons or more, and their combined population amounts to about 8¼ millions;* a further 54 towns hold between 50,000 and 100,000 inhabitants each, and account between them for an additional 3½ million people. But even if we class as towns every aggregation of dwellings that contains over 4,000 inhabitants, the number of townspeople in India cannot by any ingenuity of calculation be computed at more than 33 millions. Almost 90 per cent. of the total population, therefore, is purely rural, whereas the corresponding figure for a country such as England does not exceed 21 per cent. Moreover, despite the fact that a contrary result was anticipated by some statistical authorities, such of the 1931 Census returns as have been worked out in this connection actually indicate that the proportion of the population classed as rural is increasing relative to that classed as urban. Thus the problems of rural India, despite the comparatively small amount of popular attention which

* These and the subsequent figures are derived from the 1921 Census, since full particulars regarding the distribution of rural and urban population in 1931 are not available. It is however known that the number of towns containing 100,000 people or more has now risen from 35 to 37, and their combined population from 8¼ to 10 millions.

Totals of Literates and Illiterates: British India.



N.B.—This diagram is based on the 1921, not the 1931, Census.

they receive, both in this country and abroad, are really vastly more important than the more obvious problems of the towns.

Let us make a brief attempt to visualise the environment in which the great majority of the country's inhabitants lead their lives. The villages of India number at least 500,000, which are usually mere clusters of tiny mud huts, microscopic in scale when compared with the immense background of plain or forest or mountain against which they are set. Even now, despite the remarkable improvements in communications which have taken place, only a small proportion of these villages have either railways or metalled roads within several miles of them, and the rest must be approached by rough cart-tracks or winding pathways between the fields, of which the former alone can afford passage to bullock-wagons and such other wheeled traffic as there may be, during the season when floods do not interrupt them. Thus many millions of Indian villagers are according to Western standards extremely isolated and remote from the events of the world at large. Those that happen to be situated within a few miles of towns, or railways or good roads, are in a position to widen their outlook and acquaint themselves with larger happenings than those which village society provides, and can also market their surplus produce for consumption either in urban India or abroad; but the others are still to a great extent self-sufficing, both economically and culturally. Occasional wandering men and pedlars of course pass through them, bringing stories of the outer world, but as to most of these villagers a journey even to the nearest town is a serious adventure only to be undertaken after much thought and preparation, the interpretation which he puts upon such casual and highly-coloured tales as reach his ears is as a rule peculiar. Thus throughout the greater part of the country the typical self-contained Indian village community, which has been maintained unmodified for centuries, still exists,—an interesting and surprisingly intricate social organism, in many ways resembling the characteristic rural unit of which we read in histories of mediaeval Europe, and containing its landholders and tenants and agricultural labourers, its priest and its religious mendicant, its money-lender, and a whole order of artisans,—the carpenter, the blacksmith, and the weaver, the potter and the oil-presser,—each with his clearly prescribed functions hallowed by centuries of tradition.

Probably the most striking characteristics of the inhabitants

of these villages is their poverty. But to interpret this, for the European reader, in readily comprehensible terms, is no easy matter, not only because of the variety of conditions that are found throughout the Indian sub-continent, but also because the implications of poverty here and in Europe are in many respects different. In Western countries destitution in its worst form is found in the industrial towns, where the effects of hunger or malnutrition are aggravated by cold and damp, and frequently also by a belief on the part of the slum population that their plight is due to social injustice. In India, on the other hand, since industrialization has not yet proceeded far, the vast majority of the poor are to be found in the villages, where their lot is rendered relatively easier than it would be in Europe, or at any rate their needs smaller, by the warmth of the climate. Moreover owing to the greater rigidity of Indian social institutions the psychological consequences of poverty are on the whole less painful than in the West, since those afflicted with it have scarcely begun to consider the possibility of bettering their condition. At the same time there is no question that the material condition of the Indian masses is deplorable. Attempts have on occasions been made to interpret their circumstances in terms of income. But to estimate the true economic position of the average individual in a country which is passing by unequal transition from a natural to a monetary economy is a task of considerable difficulty. Towards the close of the last century it was calculated that the minimum average income for all India was about Rs. 30 per head per annum, and this figure is still occasionally quoted in the Press and elsewhere as affording some guide to the average income to-day; but there is reason for holding that during the decade prior to the end of the year 1929, at any rate, it no longer possessed any general applicability. In Madras, for example, the Statistical Branch of the Department of Agriculture published not long ago a careful calculation of the average annual income earned per head by agriculturists throughout the Presidency, which amounted to a little over Rs. 100 for 42·3 million persons; and investigations undertaken in Bombay yielded results not dissimilar,—the net *per capita* annual income working out at about Rs. 100 for urban, and Rs. 85 for rural areas. The general conclusion suggested by a study of such estimates as are available,—and unfortunately up-to-date estimates which are also reliable scarcely exist,—is that there has been a gradual improvement in the financial

circumstances of the masses during the last few decades,—though this process has undoubtedly received a severe check, whose extent it is not at present possible to compute, by the catastrophic falls which have occurred during the last two years in the prices of agricultural produce.

But whatever the validity of these estimates of income may be, the main fact to be emphasized is that the vast majority of the rural population of India lives perpetually on the very margin of subsistence. The condition of the agricultural labourers who do not hold land themselves, and whose wages are usually not paid in cash but in kind, is probably the most unfortunate of all, and their total number throughout the country must amount to many millions, despite the fact that India is justly considered to be essentially a land of peasant holdings. Such of them as happen to live in the neighbourhood of towns can sometimes help themselves during the slack periods in agricultural operations by labouring for town wages, but this resource, for the reasons we have already explained, is never open to more than a small proportion of them. The landholders, even those who hold small fragmented plots, are generally held to be in a better position than the labourers, because they, at least, have something on which they can raise credit; but this is often their undoing, for if they are not already encumbered by debts inherited from their fathers, their need for cash in times of stringency, or on the occasion of religious or social festivals, puts them in the hands of the money-lender, and years may elapse before the loan can be repaid. However prudent and thrifty the Indian small-holder may be, he has as a rule the utmost difficulty in keeping out of debt, since the resources on which he can fall back are so meagre; and even at the best of times he has to wait several months for a return for his labour and expenditure. It should of course be borne in mind that in most agricultural countries farmers have recourse to banks, or other money-lending organizations, for credit to finance their cultivation, and that the proportion of men who can themselves provide the cash for raising their crops over a number of years is usually small. It might indeed be argued that it is economically undesirable that any farmer should own all his working capital. But among the rural population of India personal debts and loans for cultivation are inextricably mixed, and the arrangements for financing agricultural operations are very badly organized. Moreover, if the culti-

vator borrows from the money-lender instead of from some other source such as one of the co-operative banks, the rate of interest charged him on his loan is often so high as to cripple his activities for many years to come. Recently something has been done to relieve the smaller land-holders from the worst consequences by their constant indebtedness,—as we shall shortly see,—but the process is one of immense complexity, and cannot be expected to cause any rapid improvement.

Perhaps equally serious in its effects on the prosperity of the Indian peasant,—though this evil also has been mitigated to some extent,—is the fragmentation of holdings which is almost general throughout the country. This, as we have seen, is caused partly by pressure of population, and partly also by the operation of the indigenous laws of inheritance. In the South and East of India the average holding is about 5 acres, and elsewhere not more than half the holdings exceed even this small limit. There are innumerable cultivators whose total holdings amount to one acre or less, and even these tiny areas are often split up into a number of disconnected fragments; not infrequently some of the component parts are so small that the owner cannot cultivate them without trespassing on his neighbour's land.

But indebtedness and fragmentation of holdings are essentially material problems,—ultimately amenable, in spite of their complexity, to material remedies. Much more difficult, since the Government has fewer means of dealing with them, are the psychological causes for the present state of the Indian masses. Generally speaking it would be true to say that the whole structure of traditional Indian society tends to discourage both the habit of mind and the method of life upon which the successful pursuit of economic prosperity depends, by implying that the production and accumulation of wealth is not one of the necessary functions of mankind. It is of course true that the concentration upon purely material standards of value, which is at present so characteristic of the Western peoples, causes profound uneasiness to the best intelligences among them; and on philosophical grounds it might be legitimate to urge that the powerful religious sentiment which causes large numbers of Indians to regard their lives as unimportant items in the great fabric of past and future, whose only justification lies in the means they provide for advance towards spiritual perfection, embodies something altogether nobler than the popular



A SADHU ON A BED OF THORNS.

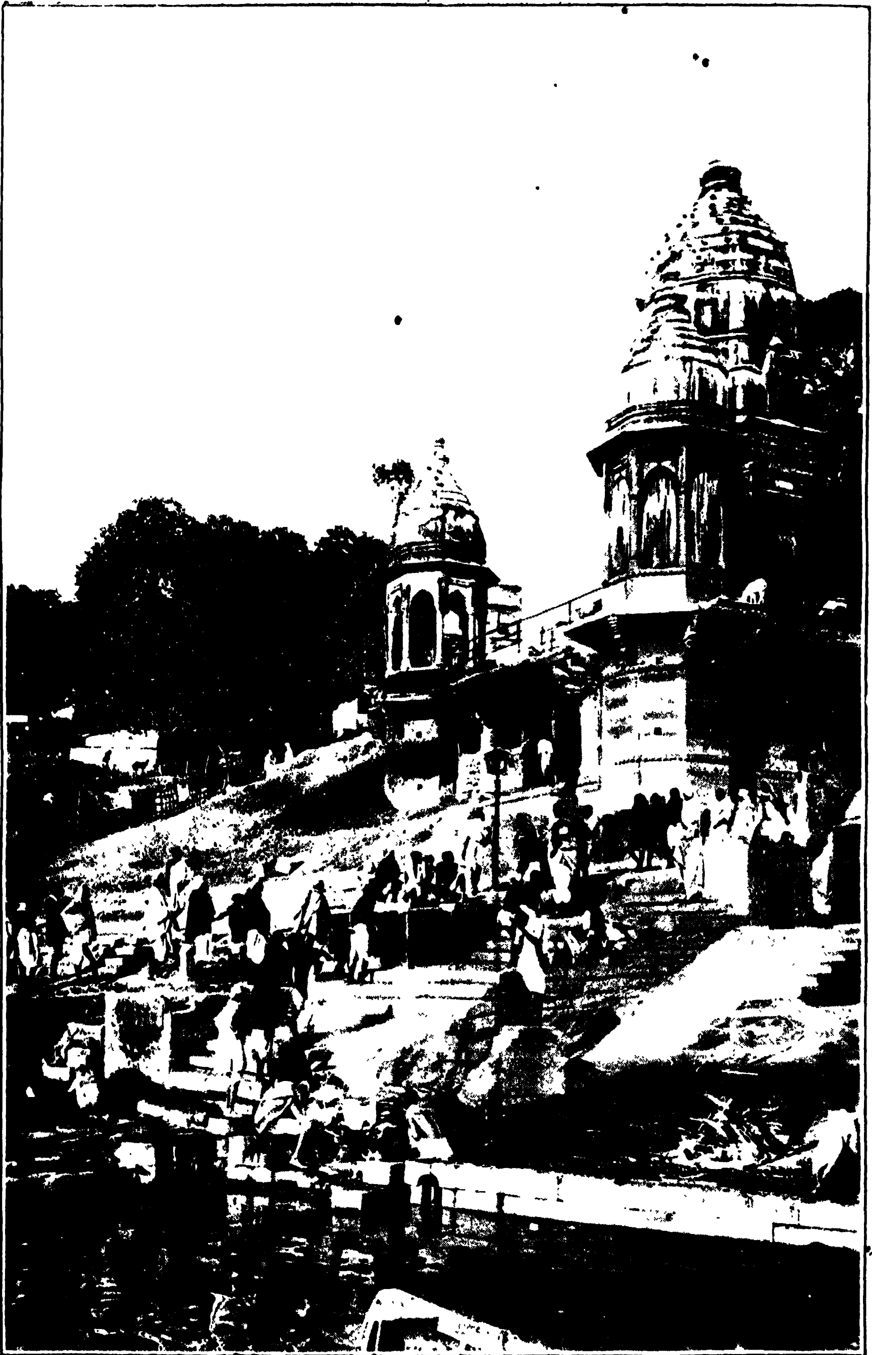
ideals of the West. But obviously this attitude is a grave handicap to the country's economic advancement.

The consequences of this fundamentally uneconomic bias of Indian psychology are manifested in a variety of ways. Throughout the country manual labour still frequently implies a loss of dignity, and whole castes are thereby debarred from productive activities. The number of religious mendicants who subsist upon the charity of the poor is so great as to impose a burden which many countries more wealthy than India would not dream of sustaining. And the joint family system,—whatever its merits from other points of view,—undoubtedly discourages individual initiative and penalizes the able and industrious for the benefit of the idle. Moreover, the social life of even the poorest workers is characterized by what from the economic point of view can only be described as recklessness; probably in no country in the world where the average production is so low, do the inhabitants expend so large a proportion of their resources upon socio-religious obligations such as festivals, marriages, and funerals. Further difficulties are raised by the fact that religious sentiment prevents the production and use of valuable food. It has long been recognized that as a result of the veneration of the cow, the economic possibilities of cattle in India are not fully exploited. At the Bangalore meeting of the Board of Agriculture in 1924, it was estimated that out of the 146 million cattle then in British India, 16 million oxen and 8·5 million cows were, allowing for all deductions, entirely superfluous; and the cost of maintaining them was believed to amount, at the least, to Rs. 176 crores annually, which is about four times more than the entire land revenue of British India.* The problem was carefully investigated by the Royal Commission on Agriculture which was appointed in 1926, and it was evident from the facts accumulated in the Commission's Report that the superfluity of useless or inefficient cattle constitutes a vicious circle wherein the agricultural resources of the country are being gradually undermined, since the prejudice against destroying such animals is leading to a progressive reduction in the economic utility of the bovine population as a whole. Again, the diet prescribed by

* It should however be realized that even if the maintenance of superfluous animals does cost Rs. 176 crores, this is a small sum compared with the total value of their produce, which will be discussed in a subsequent portion of this Chapter.

religious sentiment for large portions of the Indian people would be accounted in a Western country as definitely uneconomical. Milk and clarified butter are here considered to be among the bare necessities of life; but even a wealthy country does not produce its butter in the wasteful manner common in India. Considerable economic inconvenience also arises from the religious prejudice which still persists in many parts of the country against the use of animal manures, such as *poudrette* or bone-meal; whilst on the other hand the practice of burning cowdung as household fuel rather than allowing it to enrich the soil involves Indian agriculture in immense losses every year. Again, the fact that animal life is sanctified by religion handicaps the peasants in protecting their crops against such pests as monkeys, flying foxes, squirrels, jackals, porcupines, and rats; and the annual loss caused by the depredations of these creatures must amount to an enormous total.

The widespread prejudice against the employment of female labour also has very serious economic consequences. It is of course a fact that in certain Provinces large numbers of Indian women do habitually work in the fields, and that where this is not the general practice the women of certain agricultural castes are permitted to do so within their own families; and it is also true that *purdah* is ceasing to be as rigidly enforced as it was. Nevertheless there remain vast tracts of rural India in which about half the population is tied to activities within the home and is not available even for the urgent operations of harvesting, upon which the prosperity of the whole neighbourhood throughout many months depends. Yet a further difficulty is raised by the fact that the traditional organization underlying Indian village life prevents the cultivators from eking out their scanty resources by subsidiary occupations. Even in Europe or America the smallholders would be hard put to it if they did not devote a portion of their energies to industries such as poultry keeping, fruit growing and sericulture. But despite the fact that Indian cultivators are generally speaking obliged by climatic conditions to remain idle for more than one-third of the year, in many Provinces they have hardly begun to consider the possibility of engaging in industries accessory to agriculture. The gravity of this state of affairs has been clearly perceived of late; and many provincial Governments, as we shall see in Chapter IX, are engaged in encouraging the development of cottage industries. The interest which the Congress has recently displayed in this



A BURNING GHAT AT BENARES.

subject is also well known, owing chiefly to the endeavours of Mr. Gandhi and his followers to popularise hand spinning and hand weaving. It may be that their estimate of the benefits which this single group of activities would bring to rural India is exaggerated, ful in stimulating subsidiary industries and thus in providing cash
ful in stimulating subsidiary industries and thus in providing cash
and occupation for the peasants during the time when agricultural work is impossible, would be very beneficial.

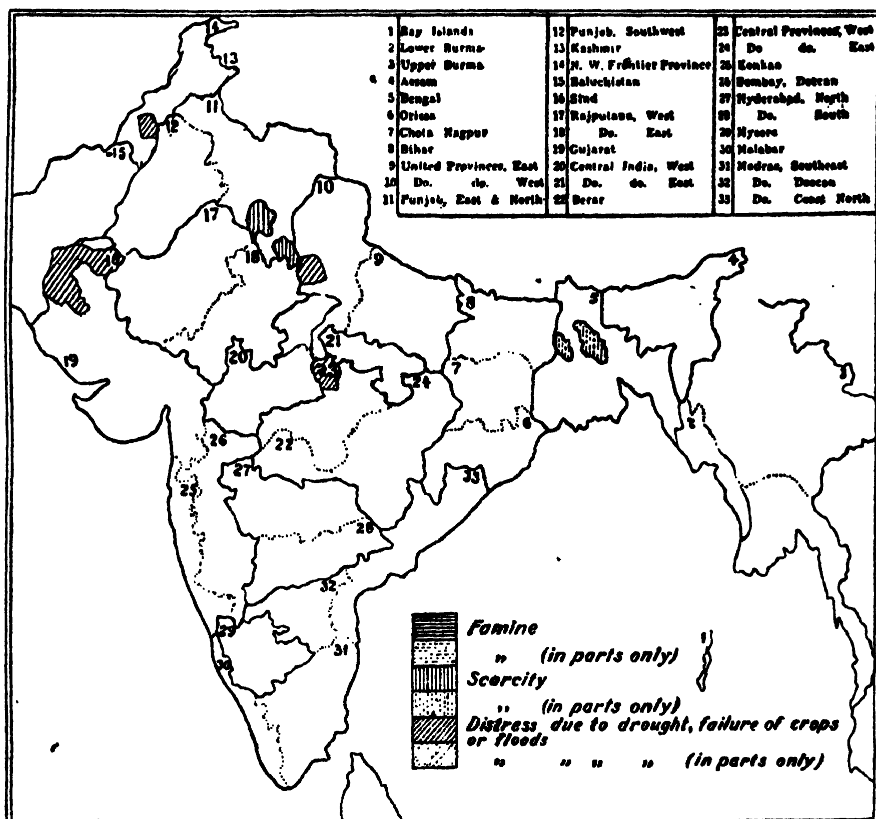
The prevalence of preventible disease is also an important factor in the situation,—as has been indicated already. A great deal of attention has recently been concentrated upon the appalling mortality or debilitation of mothers and infants that results from the traditional methods of midwifery in India, and from such practices as child marriage, the segregation of women in *purdah*, and the injudicious use of opium. But it is perhaps not sufficiently realized that apart from this, a large proportion of the villages and townlets of India serve as breeding grounds for numerous grave diseases such as cholera, plague, small-pox, dysentery, and typhoid, which are indeed to some extent inevitable in a tropical climate, but could nevertheless be greatly reduced in their incidence were it not for the poverty and unhygienic habits of the populace,—and also for their apathy, which is the more difficult to overcome in that it is generally based on a religious conviction of the unalterability of fate. Besides the mortality and suffering these diseases cause, they also involve the country in appalling economic loss; and the damage inflicted by yet another disease,—malaria,—is, as we shall see in Chapter VII, so great as to constitute a problem by itself. We need make no apology,—although it has already been quoted in previous issues of these Reports,—in reproducing a resolution passed in 1926 at the All-India Conference of Medical Research Workers, since it vividly and concisely describes the appalling state of affairs that prevails. It ran as follows:—"This Conference believes that the average number of deaths resulting every year from preventible disease is about five to six millions, that the average number of days lost to labour by each person in India from preventible disease is not less than a fortnight to three weeks in each year, that the percentage loss of efficiency of the average person in India from preventible malnutrition and disease is not less than twenty per cent., and that the percentage of infants born in India who reach a wage-earning age is about

50, whereas it is quite possible to raise this percentage to 80 or 90. The Conference believes that these estimates are under-statements rather than exaggerations, but, allowing for the greatest possible margin of error, it is absolutely certain that the wastage of life and efficiency which result from preventible disease costs India several hundreds of crores of rupees each year. Added to this is the great suffering which affects many millions of people every year. The Conference believes that the greatest cause of poverty and financial stringency in India is loss of efficiency resulting from preventible disease and, therefore, considers that lack of funds, far from being reason for postponing the enquiry, is a strong reason for immediate investigation of the questions."

Insufficiency of space has prevented our going into these various problems more exhaustively. But what we have said will have been sufficient to indicate how immense are the difficulties to be overcome before the state of the Indian masses can be materially improved. The majority of them originate out of long-standing customs which inevitably make for further distress as the population increases, since the available resources are confined within traditional limits by poverty and precedent. As time goes on, it may be hoped that increased development of these resources will gradually create a *per capita* standard of wealth sufficient for India's growing responsibilities as a nation. But unless individual initiative, combined with missionary effort on the part of the educated classes, can inspire the Indian agriculturist with the determination to better his position, it is not easy to see what any administration can do, beyond endeavouring to devise means for introducing more up-to-date agricultural methods and educating the masses up to a point at which they will be better fitted to help themselves.

A certain amount of progress has however undoubtedly been made, and we may now proceed to indicate what it consists in. Generally speaking there is, as we have already stated, some evidence that,—if periods of exceptional economic depression such as the present are excluded,—the prosperity of the Indian people as a whole has been gradually increasing. The growth in the number of third-class passengers on the railways during the decade prior to the year under review indicates that more money must have been available after the bare necessaries of life were met than was previously the case. The increased absorption of rupees,—which

Areas affected with Famine, Scarcity or Distress in 1930.

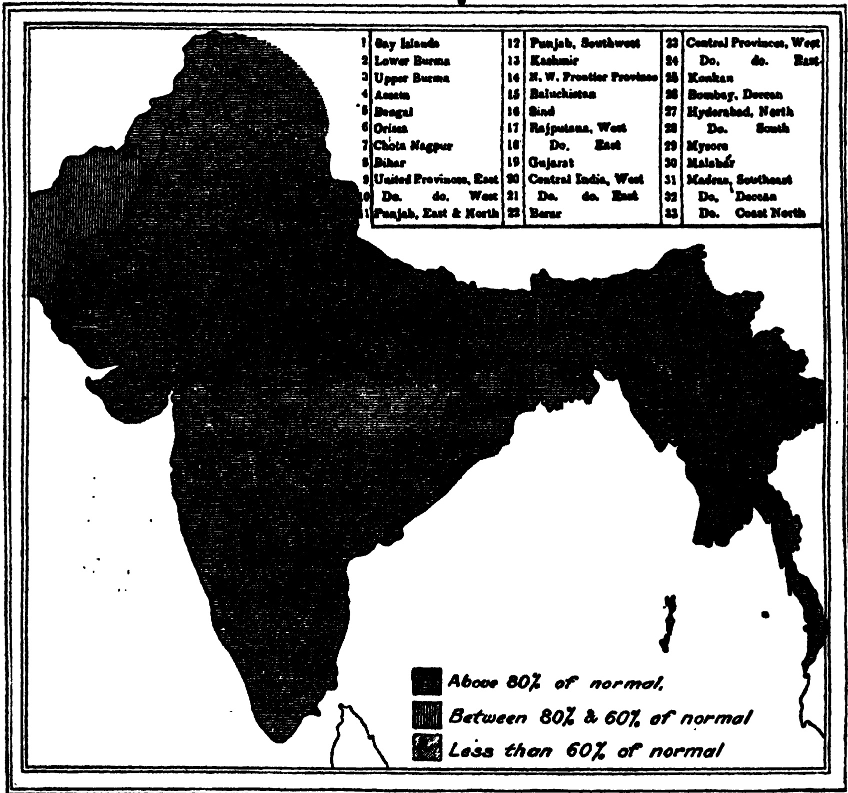


some years ago threatened the whole currency system of India with inconvertibility,—also seems to point in the same direction. Perhaps more important as evidence of a growing economic stability, is the manner in which during recent years the agricultural population has managed to withstand scarcity and famine. This was particularly noticeable during the unusually bad season of 1921, when the monsoon was generally inadequate and prices very depressed. What the consequences would have been had there been a deficiency of rainfall as well as a slump in prices during the period under review it is difficult to say, but fortunately there was not. Indications of improvement can also be seen in the growing consumption by the masses of such simple luxuries as cigarettes and mineral waters; in the steady expansion during the last decade in savings bank deposits,—of which some indication will be given in the next Chapter,—and in the increased membership of co-operative societies,—which will be discussed in Chapter IX. There has moreover been a substantial increase in the value of land during the last thirty years or so, as a result of the development of communications and irrigation, the registration of rates, and the sense of internal security,—this increase being considerably greater than the contemporaneous rise in the price of corn. Again, small industries are springing up all over the countryside, and there is a marked tendency for the primary manufacturing processes of agricultural products to extend to the small towns and even to the larger villages; as the traveller goes about the country now, he will frequently hear from the villages he passes the sound of a little engine working,—a sugarcane crusher, an oil presser, or a rice hulling mill. External economic influences are also gradually changing the conditions of village life; surplus harvests can now in many places be satisfactorily marketed, as a result of the slow but steady development of communications, and the Indian "money crops,"—tobacco, oilseeds, jute, cotton, or tea,—tend to play an increasingly important part in international trade. The extent to which the economic structure of rural India is now linked to that of the rest of the world, and can be dislocated by world influences, was strikingly demonstrated,—though in an unfortunate manner,—during the year under review. Possibly India was more slowly affected by the general decline in the prices of agricultural produce than some other countries, but the consequences here were nonetheless very serious, as the facts set forth in other parts of

this volume will show. Cultivators who depended for their income on the production of cotton, jute, and wheat were probably the most severely hit, and undoubtedly a good deal of the distress which resulted from the general depression was due to the impossibility of maintaining the higher standard of living which had been attained during the previous twenty years.

Reference has been made to the fact that the problems of rural indebtedness and the fragmentation of holdings have both been receiving attention during recent years, and that appreciable improvements have taken place. As regards indebtedness, the most effective solution lies in the development of sound co-operative societies under the Co-operative Societies Act of 1912, which was designed to facilitate the introduction of village credit societies to replace the money-lender; and the diagram opposite page 591 and the description of the working of the co-operative societies in Chapter IX gives some indication of the progress that has hitherto been achieved. In addition, certain useful amendments to the law relating to money-lending have been made in recent years by the Government of India and several of the provincial Governments, as has been explained in previous issues of these annual Reports. The co-operative societies have also proved very valuable as a means of dealing with the problem of the fragmentation of holdings, particularly in the Punjab. Besides these primarily economic factors, there are also numerous cultural influences at work, which by widening the ideas of the Indian peasant should gradually enable him to improve his position. These will doubtless ultimately prove to be the most important ameliorating forces of all. One of the most obvious is the development in local self-government, which was initiated under the Reforms of 1920,—which, again, will be described in more detail in Chapter IX. The villagers are now empowered to undertake, through the *panchayats*, union boards and other small bodies, a certain amount of the detailed administrative work of their own immediate neighbourhood, such as control over the water-supply, village lighting, and grazing rights, and responsibility for the cleaning, repair and construction of local roads, drains, tanks and bridges. The various committees are also entitled to try members of the village for certain trivial offences. As a result the rural population is being brought more into touch with the authorities, and a greater sense of self-reliance in administrative matters appears to be developing among

Distribution of rainfall in 1930.



them. Another obvious factor is the substantial extension which has taken place in primary education during recent years; the mere ability to read puts within the villager's reach the means, and often the incentive, to know something of what goes on outside his immediate neighbourhood. Again, although very many villagers are still, as we have seen, outside the range of modern means of transport, the network of railways and roads is nevertheless gradually creeping over the country's surface, and every fresh advance brings new interests and opportunities to sections of the rural populace,—the extension of motor omnibus services in recent years having been particularly effective from this point of view. The development of aviation is also bound in time to impress the imagination of the people anew with the power of the latest agencies of transport. And as scientific inventions multiply and spread, many other significant aspects of modern civilization are brought to the notice of the villagers; agents for new agricultural appliances, fertilizers, and so forth, are extending the scope of their operations and establishing themselves in places which they would hardly have thought of visiting some years ago; the introduction of the more productive, scientifically selected varieties of the staple food crops is attracting an increasing amount of intelligent interest and co-operation; and new industrial products are coming into regular use and transforming habits and improving the standard of living. And of all the various influences from the outside world which are in process of spreading to the villages, few have greater potentialities for enlightenment than wireless broadcasting. Hitherto, its development in India has been handicapped by lack of funds, and also by the multiplicity of languages in use; but if, during the next decade or so, a really strenuous and effective policy can be adopted for extending broadcasting facilities to rural India, it should prove singularly effective as a means of overcoming the physical barriers which have hitherto separated its inhabitants from the progressive movements of the rest of humanity, and proved such an insuperable obstacle to their intellectual and material development.

But we must not exaggerate the actual and potential effects of all these various influences. They are, it is true, already operating upon a considerable proportion of the Indian masses, and there seems reason to believe that their range and efficacy will gradually extend; but it is nevertheless a fact that in hundreds of thousands

of villages little if any perceptible improvement has taken place within the memory of living man. Moreover, it must be borne in mind that the extension of new ideas and practices may be dangerous as well as beneficial. Desires and aspirations may be created which it is impossible to satisfy, and in a country such as India agrarian unrest might have disastrous consequences,—a fact of which the troubles in the United Provinces and Gujerat during the year under review gave some preliminary indication.

Having now sketched in the human background, we may turn to consider the more technical aspects of Indian agriculture. The factors upon which agricultural operations ultimately depend are of course the nature of the soil, and the quantity and distribution of the rainfall. The types of soils that occur over such an enormous area as India naturally exhibit considerable variations, but four main types can nevertheless be recognized among them. One consists of the alluvial soils of the great Indo-Gangetic plain, which stretch all across the Northerly non-peninsular part of the country between the borders of Baluchistan and Burma; these, generally speaking, are the richest of all. Another type is the black cotton or *regur* soils derived from the Deccan trap, which are widely distributed throughout the Northern and Western portions of the peninsula itself and as a rule are also very productive; a third consists of the reddish soils overlying the rocks of the Archaean system in the South and South-East,—especially inland; and the fourth, of laterite soils that occur sporadically all round the coast. But although the number of soil-types is comparatively small, there are very great diversities of cropping; this of course might in any case be expected owing to the wide variations of climate that occur throughout the country, but an important accessory factor is the markedly seasonal distribution of the rainfall, which renders it possible for "double cropping" to be very widely practised. The season both for the summer, or *kharif*, and for the winter, or *rabi*, crops is however short, and their yield is of course closely dependent upon the quantity of the monsoon rains, which, as we shall indicate later in this Chapter, when we come to consider the question of irrigation, is subject to great local fluctuations despite the remarkable regularity, both in amount and in date, of the average annual rainfall for the country as a whole. Moreover the variations in the date and the intensity of the fall are often as important as its actual aggregate amount,

and in Northern India in particular the yield of the *rabi* crop is particularly dependent on the termination of the monsoon not being premature or too abrupt. To the peoples of Europe, who are accustomed to irregular periods of precipitation throughout the whole year, the richness and productivity of lands such as India, where so many of the twelve months are almost invariably rainless, is sometimes difficult to understand; but in the tropical or sub-tropical parts of the world, in which occasional showers are of little agricultural value owing to the rapidity with which evaporation takes place, a climatic arrangement whereby intense and widespread rainfall occurs during three or four months only,—which, incidentally, would otherwise be the hottest of the whole year,—has actually many advantages, especially when the rainfall can be supplemented by irrigation.

The total area of India amounts to 1,166,385,000 acres, of which 667,536,000 are contained within British India as the term is understood for purposes of agricultural survey, the remaining 508,849,000 consisting of the territories of the Indian States,* together with British Baluchistan, certain specially administered areas in the North-West Frontier Province, and a few other small tracts of land. In 1928-29,—the latest year for which detailed figures are available,—it was estimated that of these 667,536,000 acres in British India, 149,034,000, or 22 per cent., were unavailable for cultivation, owing to their being absolutely barren, or unculturable, or covered by buildings, water, roads, and so forth. Most of the barren or unculturable lands are situated, as one would expect, in the hilly tracts of Burma and Southern India, in the Himalayas, and in the dry and desert regions of the North-West. A further 87,224,000 acres, or 13 per cent. of the total, were occupied by forests. Of the balance of 435,278,000 acres, or 65 per cent. of the total, that represented the area available for cultivation, 48,432,000 acres were fallow, and 154,680,000 consisted of culturable waste, that is to say of lands which had either never been cultivated or had been for some reason abandoned. Thus the net area actually sown with crops during 1928-29 was 228,166,000 acres,† or 34 per cent. of the total. If, however,

* Including both those within the political jurisdiction of provincial Governments and administrations, and those having direct political relations with the Government of India.

† The corresponding figure for the previous year was 223,862,000 acres.

lands sown more than once during the year are taken into consideration, the gross sown area in 1928-29 amounted to 262,328,000 acres*. Of this area, food-crops occupied about 210,795,000 and other crops about 51,190,000 acres. Among the food-crops, food-grains,—that is to say cereals and pulses,—covered as much as 200,268,000 acres, and the other food-crops,—including sugar, condiments and spices, fruits, and vegetables,—only 10,527,000 acres. By far the most important of the food-grain crops was rice, with which 81,132,000 acres were sown; the corresponding figures for the principal millets, (*juar*, *bajra*, and *ragi*) and for wheat,—which, exclusive of rice, covered the largest areas,—being 37,390,000 and 24,925,000 respectively. Of the 51,000,000 acres under non-food crops, fibres, such as cotton, jute, and hemp, occupied 20,226,000, oilseeds 17,887,000, and the remainder,—consisting chiefly of dyes and tanning materials, tobacco, tea, coffee, opium, and fodder-crops,—13,077,000 acres.

The first general quinquennial census of the livestock of British India was undertaken in 1919-20, and the second in 1924-25.† The latest returns indicate that the total number of livestock in British India is 218,060,000, the bovine population alone,—that is to say oxen and buffaloes,—totalling 151,339,000. Sheep and goats amount to 61,944,000, and the remainder, consisting of horses and ponies, mules, donkeys, and camels, to 3,777,000. Thus it will be seen that by far the largest class of livestock in India is the bovine; and although a large number of these cattle are, for reasons we have already indicated, economically superfluous, there would in any case tend to be, in India, an unusual numerical predominance of cattle over the other classes of livestock; for despite the fact that one out of the three services which cattle render to mankind throughout the rest of the world, namely the production of meat, is, for religious reasons, of no value to the majority of the Indian population, the other two,—that is to say the provision of milk, and of means of transport,—are of quite exceptional importance. So essential, indeed, are the uses of oxen as draught animals in this country, that without them, both cultivation, and the transport of produce, would be almost impossible; and the necessity for the production of large quantities of milk,

* For the previous year the figure was 255,862,000 acres.

† Livestock censuses are undertaken in Burma and the Central Provinces annually.

when the majority of the population is restricted to a vegetarian diet, is too obvious to require emphasis.

The system of land tenure in India exhibits almost every conceivable variation, from immense estates, containing thousands of tenants, to minute peasant holdings of well under an acre in size. It is, nevertheless, possible to classify the holdings into certain fairly well-defined groups. When the revenue is assessed by the State on an individual or community owning considerable landed property, and occupying a position analogous to that of a landlord, the tenure is known as *zamindari* or " village community "; and when it is assessed on individuals who are the actual occupants, or are accepted as representing the occupants, of smaller holdings, the tenure is known as *ryotwari*. Under either system there may be rent-paying sub-tenants. *Zamindari* tenure may be either " permanently settled ", which means that the land-revenue has been fixed in perpetuity, or " temporarily settled ", in which case the revenue comes up for revision at certain specified periods. Village community and *ryotwari* tenures are, as a rule, temporarily settled, and the land revenue assessed on them is thus liable to change from time to time. In 1928-29 the total acreage of *ryotwari* holdings was 334,598,000, of permanently settled *zamindari* or village community holdings, 121,017,000, and of temporarily settled *zamindari* or village community holdings 198,902,000. Thus 51 per cent. of the total area was held by *ryotwari* proprietors, and 19 per cent. was held by permanently settled and 30 per cent. by temporarily settled *zamindars*.

Of the numerous grave defects of traditional Indian agricultural methods,—arising largely from social and religious causes over which the Government has little or no control,—and of the immense potentialities that exist for increased production under more scientific management, some indication has already been given; but, as we have seen, the Administration has for many decades been endeavouring to remedy some of these deficiencies, and by undertaking, in the absence of private activity, the functions of seedsman, manure seller, agricultural engineer, and implement dealer, has performed valuable services in bringing the more immediate practical advantages of modern agricultural methods to the notice of Indian land-holders. But until the time of Lord Curzon's Viceroyalty, when Departments were created both in the Central and provincial Governments for the specific

purpose of directing State agricultural activities, and experimental farms, colleges, and research stations were set up in various parts of the country, little had been done towards initiating agricultural research in India itself. The progress achieved since that date has however been extremely impressive. Subsequent changes in organization have largely consisted in a gradual decentralization of the administration of agricultural subjects, and the Government of India has been divested, except to a very small extent, of all direct powers of control over their development in the Provinces, the provincial Governments being now free to create their own agricultural services. But by the time these alterations were affected, the Indian Agricultural Service, which was constituted in 1906, had already a fine record of achievement to its credit, and although recruitment to this Central service has now ceased, the Government of India is still in a position to make an important contribution to agricultural progress by fostering research, which no provincial Government is as yet able to undertake on anything like an adequate scale; and the final establishment, during the period covered by our previous Report, of the Imperial Council of Agricultural Research, whose creation was one of the major proposals of the Royal Commission on Agriculture, which reported in 1928, should render these surviving activities of the Central Government even more effective.

Perhaps the most conspicuous of the results achieved, since the date of their establishment, by the Central and provincial Departments of Agriculture, has been the introduction over a wide area of improved varieties of the country's staple crops. It was reported that the total area under such improved strains in 1929-30 exceeded 13,700,000 acres,—a satisfactory figure in itself, but nevertheless necessarily also an under-estimate, since it is quite impossible for most Agricultural Departments, with their limited staff, to keep account of every area on which improved seeds are sown. The introduction of these improved varieties into general cultivation has only been achieved by means of patient plant-breeding work by modern scientific methods in the various agricultural institutions throughout the country, and by the widespread use of village demonstration plots; and the peculiar success of this branch of State agricultural activity is of course due to the fact that no scientific novelty is so readily accepted by the Indian farmer as an improved seed, since it involves comparatively little

capital expenditure or risk, whereas the purchase of improved implements, or the introduction of improved methods of cultivation, necessarily makes a larger demand on his scanty resources. At the same time, the successful introduction of an improved crop more often than not paves the way for other agricultural innovations and for a general rise in the standard of farming. There is however still immense scope for further work in this direction, both by the development of research in plant genetics and by improvements in the arrangements for distributing seed, which, as we have seen, is still largely undertaken by the State,—or by co-operative organizations,—owing to the fact that there are hardly any private seedsmen in the country who sell seeds of guaranteed purity.

The most important crop grown in India, both from the point of view of its value and the area it covers, is rice. The chief rice-growing Provinces are Bengal, Bihar and Orissa, Burma, the Madras Presidency, the United Provinces, the Central Provinces, and Assam,—of which Bengal usually grows about 21,000,000 and Assam about 5,000,000 acres. Burma is the only Province which has a large exportable surplus, but in recent years, as will be explained in Chapter V, she has been meeting with increasing competition in her foreign markets. As, however, India exclusive of Burma produces less rice than she consumes, a large part of the exportable surplus from Burma does not actually pass outside the confines of the Indian Empire. Bengal also,—although to a far smaller extent than Burma,—exports a certain quantity abroad, consisting almost entirely of the fine rice known as Patnahi rice. The total area sown with rice throughout the country usually amounts to about 85,000,000 acres, and the yield to about 30,000,000 tons,—the average yield per acre being therefore approximately 7 or 7½ cwts. Most other rice-growing countries obtain a somewhat heavier crop. In recent years much attention has been devoted to the problem of obtaining better quality and yield from Indian rices, and provincial Departments of Agriculture have spent large sums in fostering research on the subject. The latest returns indicate that about 2,270,000 acres of rice-growing land throughout the country are now sown with improved varieties. In Bengal, the rice crop has engaged the attention of the Economic Botanist employed by the provincial Government for over 20 years, and his work at Dacca on the genetics of the plant is well known. Rice-

breeding work is also in progress at several experimental farms throughout the Province. In Madras, valuable work on the genetics of rice has been done by successive rice specialists, and the investigations made at the paddy-breeding station at Coimbatore and its sub-stations in other parts of the Presidency have enabled improved varieties to be successfully introduced over a wide area. In Bombay, successful work has been done at the rice-breeding station at Kerjat, and research in Sind has recently been started. In Bihar and Orissa, a partial survey of local rices has led to the introduction of several improved types, and similar results have been achieved in Burma and the Central Provinces by selection work on the Agricultural Department's farms. In the United Provinces, a botanical survey of the provincial rices has recently been completed and various strains are now under test; and successful investigations have also been undertaken on the problems of manuring and cultivation. In some of the Indian Universities, also, interesting and valuable work on the physiology of the rice plant is in progress. There is however reason to suppose that the results obtained would be even better if all these activities could be more effectively co-ordinated, particularly with regard to research in genetics. The method whereby certain characteristics,—as for example those determining the yield and quality of the crop,—are transmitted, still remains in many respects obscure, and the variety of the types grown, and of the conditions under which they are produced, is so great as to cause a good deal of confusion. Under a co-ordinated scheme, all definite unit species isolated in any one Province would be fully described and maintained, and made available more readily for workers in other parts of India; and in all probability the number of types of economic value would be found to be substantially smaller than is generally supposed. During the year under review a scheme for co-ordinating the experimental work which is in progress throughout the country was devised by the Imperial Council of Agricultural Research, under which it is hoped that the botanical and agricultural surveys of the different types of rices will be completed and cultivation and manurial experiments intensified. The cost of financing this scheme, which has been designed to apply to about 95 per cent. of the rice-growing area in India,—and which has been brought into operation since the conclusion of the period under review is estimated at Rs. 11,22,410, of which the Imperial

Council of Agricultural Research will contribute Rs. 9,19,130 and the Empire Marketing Board the remaining Rs. 2,03,280. The purpose of the contribution from the Empire Marketing Board is to cover half the cost of bringing the scheme into operation in the two exporting Provinces, Burma and Bengal.

As we have indicated, a variety of important food-crops are included under the heading of the millets, of which perhaps the most important is *juar*, known as the great millet, whose grain constitutes the staple food of the agricultural population of the Deccan,* and is also used in parts of the United Provinces and Burma. The straw is widely employed as a fodder for cattle. Until recent years, comparatively little attention was paid to the millets in the various agricultural institutions throughout the country, but the importance of improving the quality and yield of these crops is now more widely recognized. In the Madras Presidency, useful work has been done by the Millet Specialist at Coimbatore, in co-operation with the Deputy Directors of other research stations in the Province, not only on *juar* or *cholam* (*Andropogon sorghum*), *bajra* or *cumbu* (*Pennisetum typhoideum*), and *ragi* (*Eleusine coracana*) but also on a fourth millet known as *tenai* (*Setaria italica*). A number of different strains have been isolated from the local mixtures and identified, and the genetics of the four crops are being investigated. Among the strains of *juars* that have been isolated and appear likely to prove superior in cropping capacity to the types locally used, are two which are considered suitable for growth under irrigation in Coimbatore District, and another which might do well on the black rain-fed soils of Kurnool. As regards *ragi*, a strain which was isolated last year is now being tested, and will, it is hoped, give satisfactory results. In the Punjab, the Millet Botanist has continued to work on a number of strains of *juar* and *bajra* introduced either from other Provinces or from foreign countries, in order to see whether they will prove suitable to local conditions or useful for purposes of cross-breeding. Three improved strains of *bajra* were tried for comparative yields at various farms in the *bajra*-growing districts. Some of these varieties yielded as much as 5 maunds of seed per acre more than the local strains, but further experiments will be

* *i.e.*, the uplands of Central and South Central India, including portions of the Bombay and Madras Presidencies and the Central Provinces, together with the territories of several Indian States.

necessary, since certain of the tests were vitiated by climatic irregularities. In the Central Provinces there are now about 130,000 acres sown with improved varieties of *juar*. Mass selection of *bajras* has also produced seeds which give a higher yield per acre than the ordinary types in use, and selections of certain other millets are under trial. In the Bombay Presidency, *juar*-breeding has for some time been in progress at Surat and Broach, and has recently been started at Mohol in the Deccan. Work on *bajra* has been undertaken at Poona, Dhulia, and Nadiad. A variety of *juar* evolved at Surat, in a fully replicated test, has yielded 15 per cent. more grain than the local strain. As we pointed out in our last Report, improvement of the millet crops in areas of scanty rainfall presents peculiar difficulties, but is greatly needed, since the tracts of country upon which millets are grown are frequently of this nature. Substantial success involves both the selection of types capable of maturing with a limited moisture supply, and an improvement in the methods of cultivation. Both aspects of the problem are now receiving more attention than hitherto.

In normal years the area sown with wheat in India amounts to about 31,000,000 acres, of which 11,000,000 are in the Punjab, 7,000,000 in the United Provinces, and 3,000,000 in the Central Provinces. There are also considerable wheat-growing areas in the Bombay Presidency, Bihar and Orissa, and certain Indian States. The yield of the crop varies from 8,000,000 to 10,500,000 tons and consumption within India usually ranges between 8,500,000 and 9,000,000 tons. The produce of India therefore requires to be supplemented by imports from abroad in years of poor crop unless accumulated stocks are adequate, while on the other hand there is an exportable surplus when the indigenous crops are good. In the year 1929-30 an exceptionally heavy crop, amounting to 10,496,000 tons, was obtained, and the 1930-31 crop, it is believed, amounted to approximately 9,302,000 tons. During the year under review, therefore, India had a substantial exportable surplus for the first time for a considerable period. But unfortunately almost all the other exporting countries, such as the U.S.A., Canada, Australia, the Argentine, and the States of Central and Eastern Europe also had excessive supplies, and the situation was further complicated by the fact that Russia had again come into the market as a seller. As a result the price of wheat in India fell to an unprecedentedly low figure, amounting at one time

in some parts of the Punjab to no more than Rs. 1-2-0 per maund, and a large part of the Indian wheat crop therefore yielded no profit to the grower. India probably suffered even more from the collapse in prices than most other wheat-growing countries, owing to her relatively antiquated and costly methods of production, and the necessity for improving the quality and yield of the Indian crop by scientific means was even more obvious than before. The amount of work already done in this direction however has been by no means inconsiderable. In the Punjab, the wheat crop has engaged the attention of the Agricultural Department since 1907, and the latest returns indicate that more than 2,500,000 acres in the Province are sown with improved types of wheat, approximately 2,000,000 of which are sown with the type known as "Punjab 8A", which was officially given out to farmers by the Agricultural Department in 1919. In hundreds of severe practical tests this wheat has been shown to yield substantially more on average lands in the Punjab plains than the ordinary local types. The Cerealist to the Punjab Government has however now obtained several new types by crossing, which promise even heavier yields than those from "8A" on the richer soils. Work on the evolution of types having special powers of resistance to deficiency of moisture, and to the disease known as rust, is also being carried out. At the Imperial Institute of Agricultural Research at Pusa, in Bihar and Orissa, work on the improvement of Indian wheats has been one of the most important items in the programme of the Botanical section since 1905. "Pusa 12" and "Pusa 4" have now become the standard types in several parts of India, including the United Provinces, the Central Provinces, the Frontier Province, and Sind. In the United and Central Provinces about 1,600,000 and 660,000 acres respectively are sown with improved types of wheat,—mainly Pusa varieties. A number of newer types of very high quality were extensively tested during the year under review. Among sixteen samples of wheat grown at Pusa and in Sind which were tested for milling and baking properties, the finest sample was amongst the Pusa set and appeared to be equivalent in value to good Manitoba wheats. It is attractive in appearance, although unlike Manitoba in being amber-coloured instead of red; it behaved excellently in the bake-house and if it can be successfully grown in India should be of commercial importance as a strong wheat. It is of interest also that certain relatively

weak Indian wheats appeared to have high blending value; they milled well and gave good white flours. From all points of view they seemed superior to ordinary "choice white Karachi" wheat as commercially used for blending.

Of the numerous species included under the heading "pulses" the most important are probably gram (*Cicer arietinum*) *arhar* (*Cajanus indicus*), lentils (*Lens esculenta*), beans (*Phaseclus*), and peas (*Pisum arvense*). In 1929-30, the area under gram was 11,400,000 acres, of which the United Provinces grew about 4,700,000, the Punjab 3,100,000, Bihar and Orissa 1,400,000, and the Central Provinces 1,200,000 acres. It is an important crop, especially in areas of rather scanty rainfall, not only because of its grain, but because being leguminous it adds nitrogen to the soil. Research on gram has been in progress at Pusa for many years. In 1929-30 the classification and description of unit species isolated at Pusa was revised, and the results are in course of publication. The total number of distinct varieties classified is 84. Differential tests for yield have not yet been completed. Apart from the work at the Pusa Institute itself, a good deal of useful plant-breeding work on gram and peas is going on in other parts of Bihar, and the best types of gram evolved at Pusa have never excelled two of the local selections known as "T.2" and "T.4" in the portion of the Province lying South of the Ganges. In the Punjab, a collection of the local grams was made a number of years ago and the different types scientifically separated. Three of the best varieties were tested during the year on Government farms and their superiority in yield over the kinds ordinarily grown was confirmed. Several hundred maunds of seed from these varieties have now been made available for distribution among local farmers. The area sown with improved varieties of gram in the Province must now be large, but detailed figures are not yet available. Much damage is done to the gram crop in certain parts of the Punjab, particularly in the North, by a blight which has been shown to be caused by the fungus *Mycosphaerella pinodes*, which on occasions has practically destroyed the crop in Attock District; and scientific investigations into its incidence were begun in 1926, particularly with regard to the effect of varying meteorological conditions upon it. In the United Provinces, the area sown with improved types of gram,—chiefly those evolved at Pusa,—rose during 1930-31 from 48,000 to 71,000 acres. In Burma, a

type of gram resistant to wilt has proved popular among cultivators, and land that four or five years ago was totally uncropped, is now bringing in a good income. The pulse known as *arhar* or pigeon pea has also received a good deal of attention from experts in various parts of the country. At Pusa types possessing high wilt-resistance have been evolved which also yield heavily in ordinary conditions of cultivation.

We may now turn to consider the work that has been done to improve certain of the non-food crops, taking cotton first. The area annually sown with cotton in India is as a rule about 26,000,000 acres and the yield about 5,000,000 or 6,000,000 bales. According to the latest figures the total acreage under improved varieties is now 4,131,000. The research which has enabled this result to be achieved has been financed partly by the provincial Departments of Agriculture and partly by the Indian Central Cotton Committee. In the Central Provinces, the variety known as "Verum No. 262",—which was found to be resistant to wilt even on land on which the ordinary varieties of the Province failed to grow, and which has a lint which spins 20s to 22s as compared with 8s to 12s in the case of local "Oomras",—has been greatly in demand among cultivators, and the Agricultural Department hopes that about 40,000 bales will be marketed in the coming season. Last year this cotton fetched about Rs. 100 on "Oomras" which is approximately equivalent to Rs. 65 on "Broach". In certain parts of the Province, however, where the rains are unusually prolonged, its early-maturing characteristics constitute a disadvantage, but it appears likely that the Agricultural Department will soon succeed in selecting a special strain suitable for cultivation in these regions. In the Madras Presidency, a scheme is in hand for producing a variety of cotton more suitable to local conditions. "Karunganni" cotton, which spins 26s standard warp, is a much better yielder in good years than "Uppam", which spins 14s only, but in bad years, the position is reversed, and the cultivator tries to meet the difficulty by growing either a mixed crop, or else by changing from one variety to the other in alternate years. Obviously, neither of these practices is really satisfactory, and efforts have therefore been made to select a strain combining the good features of both varieties. As straight selection has not yielded the desired improvement hybridisation has now been resorted to. Some interesting

agronomic experiments have also been conducted in the Presidency, as a result of which it has been shown that the sowings at the beginning of September yield on the average over 40 per cent. higher than sowings at the beginning of October. It is now estimated that there are 260,000 acres under the different improved varieties of cotton in this Province. In the Punjab,the area under improved strains during the year amounted to over 1,000,000 acres. Here the American varieties "4F" and more recently "289F" have proved more satisfactory to the farmer than the *desi* varieties when grown on the better types of land. The *desi* varieties on the other hand are generally more profitable to growers than the American varieties on land of indifferent quality with a poor water supply. Attention has therefore been given by the Cotton Botanist and his staff to the problem of evolving better strains. In addition an expert committee, including the agricultural chemist, plant pathologist, entomologist and cotton research botanist, has recently been endeavouring to ascertain the reason for the partial failures which periodically occur in the Punjab American crop. At present it is suspected that the cause is primarily climatic, and special endeavours are therefore being made to evolve hardier types of American cottons; some promising strains have already been selected. Research has also been continued into the problem provided by the peculiar incidence of the pink bollworm in the Punjab, which does serious damage in the South-Eastern parts but scarcely affects the canal colonies at all; and endeavours have been made to ascertain how far the relative immunity of the latter area is due to natural controlling influences. It has now been demonstrated that the emergence of the moth from the pupa is as a rule inhibited by conditions of high temperature and low humidity such as prevail in the canal colonies, and unless the extension of irrigation alters the climate in this region there appears little likelihood of the pink bollworm becoming a serious pest there. It has also been shown that stored cotton is the chief source of re-infection,—particularly low grade "*patti*" heaped in ginning factories. Exposure to the heat of the summer sun for a day is found to be effective in killing the worms where small quantities of seed are concerned. In the United Provinces, an important investigation, financed partly by the local Government and partly by the Imperial Council of Agricultural Research, into the problem of controlling the depredations of the pink bollworm,

has recently been successfully concluded. Good results have been obtained by heating the seed to about 60° C., which is sufficient to kill the *larvæ* and does not affect the vitality of the seed; and this treatment proves effective, owing to special apparatus which has been now devised, when a considerable bulk of seed is concerned, whereas exposure to the sun's rays is not. Experiments with some of these special heating contrivances have proved very successful. An area of 23,000 acres was sown with cotton seed that had been treated in this way in the Atrauli *tahsil* of Aligarh District, and it was the general opinion that the crop was the best ever seen in the neighbourhood. A series of experiments carried out over a period of several years, in isolated blocks of cotton from which pink bollworm could be almost entirely excluded, have demonstrated that if the pest can be controlled the gain in quality and quantity amounts to at least 40 per cent. of the total value of the crop.

In the Bombay Presidency, where the largest quantities of cotton are grown, the Indian Central Cotton Committee is helping the local Government to finance five special research schemes. The first of these is known as the Surat physiological scheme, its object being to determine the causes for shedding of cotton buds, flowers and bolls, and to devise measures to reduce this. From the investigations conducted hitherto it appears that shedding is mainly due to deficiency of nitrogen. The efficacy of applying nitrogen in readily available form to the soil depends on the amount of water present, and in a rain-fed crop this is difficult to regulate; but where water is provided by irrigation control is easier, and under these conditions it appears that a late application of nitrogen to the crop might often greatly increase the yield. The object of the second scheme, known as the Surat entomological scheme, is to devise means for controlling the pests known as spotted bollworms (*Earias fabia* and *insulana*). These bollworms do a great deal of damage in many parts of the country. The *larva* pupates in the soil, and experiments demonstrated that if the surface was covered with a shallow mulch the emergence of the moth was often prevented. It is however difficult in ordinary circumstances to maintain an efficient mulch right up to the stems of the plants. A considerable measure of success would however appear to be obtainable if immediately after harvest, all cotton sticks and stubble were completely cleared up and alternate host plants which

harbour the carry-over from season to season eradicated. Further work on this problem is in progress. The Dharwar wilt scheme is designed to determine the cause of wilt disease and find means of checking it. Wilt is the most serious malady to which the cotton plant is prone in the Presidency and adjoining regions. It appears that the best means of remedying it is to evolve and employ strains of cotton immune or resistant to it,—an expedient which genetical work has frequently rendered possible in the case of other plants. Considerable progress has already been achieved in this direction, and the Department is now distributing the seed of a cross which careful experiments have shown to be highly wilt-resistant. The fourth scheme is the Khandesh cotton-breeding scheme, under which some "Bani-Comilla" crosses effected by the Department some years ago are being thoroughly tested both on replicated plots and in large field trials. Attention has been chiefly concentrated on one cross now known as "Banilla" which has been found to give similar yield, a higher ginning outturn, and a better lint than the local type. The last scheme in the Bombay Presidency is known as the Sind physiological scheme, and is intended to throw light on certain problems connected with the water requirements, sowing dates and the general physiology of the cotton plant under perennial irrigation, in anticipation of the change from irrigation by inundation which will be effected when the Sukkur barrage is in full working order. The work is in progress. The total area under improved varieties of cotton in the Bombay Presidency is now estimated at over 1,000,000 acres.

In addition to initiating these special research schemes in the Bombay Presidency, the Indian Central Cotton Committee has continued to do very valuable work in other directions during the year. Since among those serving on it are cotton-growers, ginners and dealers, millowners, exporters and agricultural specialists, there is practically no problem concerning cotton with which it cannot deal with authoritatively. The Committee obtains its finances by a cess of 2 annas per bale imposed on cotton exported or consumed in any mill in British India. During 1930-31 the Committee assisted Provincial Governments and certain Indian States in organizing several other schemes besides those already described for improving the production of cotton in India. In addition it allotted funds for six new schemes in various parts of

the country which are likely to commence in the current financial year. These include botanical work for the evolution of improved varieties, physiological studies to determine the causes of "shedding", meteorological work to throw light on the effects of climate on the crop, entomological work on bollworms and other insect pests, and research into the causes of wilt. At the Institute of Plant Industry at Indore, which is largely financed by the Committee, work was continued on cotton genetics, physiology and agronomy, with special reference to the cottons of Central India. Satisfactory progress was made in designing improved methods of cotton cultivation. The yields of the best plots at the Institute have been nearly doubled, despite the fact that the rainfall locally was unsatisfactory. The fact that remarkably heavy yields can be obtained if fields are cleaned of *kans* and other weeds, grading and drainage properly attended to, and compost applied to the groundnut crop which precedes cotton is now beginning to be recognized among the cultivators. Considerable headway has also been made in other directions. A number of promising selections from the local "Malwi" cotton has been made and trials of a few of what seem the best types are now far advanced. Experiments have been undertaken with the object of increasing the yield and ginning percentage of "Bani" cotton by hybridisation. In the Committee's Technological Research Laboratory at Matunga, the volume of work has continuously increased. The number of samples of fibre tested for Agricultural Departments during 1930-31 was greater by 71 per cent. than in the previous year, when the total had surpassed all earlier records. The rapid rise in the number of samples tested for spinning quality is chiefly due to the importance of these trials in determining which of the many new strains experimentally selected in research stations should be used for further work. Standard Indian cottons were as usual also tested, and a beginning was made in carrying out tests for cotton trade associations. Samples supplied by the East India Cotton Association, representing the average commercial crop of the year, were examined, and arrangements were made with the Millowners' Association of Bombay and Ahmedabad to test the first arrivals of each important growth of the 1931-32 season at the laboratory. Trials were also undertaken on two systems of high draft spinning, with interesting results; and experiments are in progress to show the amount of moisture which baled cottons will absorb when stored

in the different climatic conditions which obtain in Bombay at certain periods of the year.

Among the fibres other than cotton produced in India, the most important is jute. In normal years the jute crop covers about 3,500,000 acres, of which nearly 90 per cent. are in Bengal; but the area laid down to jute in 1931 was greatly reduced, owing to the collapse in prices obtainable for the commodity, and at the time of writing is estimated at 1,900,000 acres only. Generally speaking however jute is one of the most satisfactory of crops from the cultivator's point of view, since in the areas in which it is grown it is frequently the only "money crop" which can be raised; moreover in producing it, the cultivator as a rule incurs no expenses beyond the cost of seed and rent of the land. Thus as long as conditions persist in which the profits obtainable from jute exceed those obtainable from rice, it is certain to be extensively grown. In recent years there have been complaints from abroad of a deterioration in the quality of Indian jute, and during the year under review this matter was discussed in Calcutta at a meeting of the representatives of the trade and of the Agricultural Department in Calcutta, the finding of the assessors being that deterioration has in some measure occurred, owing to poor handling and other remediable trade factors. Much useful work has been done for many years past by the Bengal Agricultural Department in the direction of improving the varieties of jute grown. Among races of *Corchorus capsularis* the Departmental selection "D. 154" remains supreme as a heavy yielder of good quality fibre, and "chinsura green", another Departmental selection, holds a similar position among varieties of *Corchorus olitorius*. Endeavours are however being made to evolve even better types. Crossing and single plant selection is being continued, and several new strains are now ready for multiplication and testing. Experiments are also in progress to determine the effects on yield and quality of differences in the spacing between growing plants, and of harvesting the crop at different stages of maturity. As was pointed out in the report of the Royal Commission of Agriculture, although India still possesses practically a monopoly in jute, it is of importance that improvements should be effected in the quality, outturn and methods of manufacture of the commodity, and that the relative cheapness of jute as compared with other fibres should be maintained. Otherwise, the demand would inevitably tend to

decline, and the effects upon the economic position of India, and in particular of Bengal, of any permanent falling-off in the world's requirements of jute would be serious. The Commission, largely with the object of preventing this, suggested the formation of a Central Jute Committee similar in composition to the Central Cotton Committee. This proposal has been fully examined by the Government of India in consultation with the provincial Governments concerned and the various sections of the jute trade, but action with regard to it has had to be postponed until financial conditions improve.

Another important Indian fibre is sann hemp, which covered during the year under review a total area of 646,000 acres. About 200,000 acres are usually devoted to the crop in the United Provinces, and over 100,000 in the Madras and Bombay Presidencies and the Central Provinces. The rest is grown in Bengal, Bihar and Orissa, and the Punjab. The best Indian sann hemp is in no way inferior to several well-known grades of European hemp, and if regular supplies of uniform quality were forthcoming a satisfactory price would be obtained on the London market. At present, however, exports only amount to between 20,000 and 25,000 tons per annum, and complaints are frequently received that the quality and packing are unreliable. As a result, the prices obtained in the market for Indian hemp are usually disappointing, the quotation at one time having been in the neighbourhood for £44 per ton as against £68 per ton for Italian hemp. The Indian Trade Commissioner, the Vegetable Fibres Committee of the Imperial Institute in London, and the Royal Commission on Agriculture have all drawn attention to the future possibilities of the trade in Indian sann hemp and the Imperial Council of Agricultural Research has now taken the question up. A Hemp Marketing Officer was recently appointed temporarily to investigate the subject and his report, which was completed during the year under review, will be published shortly. It must however be pointed out that even if substantial improvements are affected, it is anticipated that the export trade in Indian hemp will be exposed to considerable difficulties in the near future, owing to the renewal of Russian competition and the increased use of hard hemps in Europe. On the other hand benefits are likely to result from the scientific researches on the sann crop which have been in progress in various parts of the country

for some years. In the United Provinces, the Economic Botanist has been working on the improvement of this crop since about 1923, mainly with the object of selecting improved varieties. As a result a strain named "Cawnpore 12", which gives a better quality and higher yield than the ordinary one, has been evolved, and its seed distributed to cultivators. In the Bombay Presidency experimental work is in progress at the Government farm near Ratnagiri. Some selection work with the object of evolving wilt-resistant strains has also been undertaken at the Manjri farm, Poona. In the Central Provinces, research has been started to determine the effect of the seed-rate on the quality of the fibre and the yield, the effect of water-temperature on the crop, the correct stage at which cutting should be undertaken, and so forth, and some interesting results have been obtained.

The importance of the Indian tobacco crop has increased substantially in recent years. The area upon which it is grown now amounts to about 1,300,000 acres, which is approximately 30 per cent. more than the pre-war average. The yield of dry leaf is about 1,348·5 million lbs. or on the average about 1,000 lbs. per acre. India, therefore, grows about 39 per cent. of the total quantity of tobacco produced in the world and about 90 per cent. of the total quantity grown in the British Empire. Although the area grown is small in proportion to that laid down to other crops, the total value of the crop amounts to as much as Rs. 50 crores. Only about 2 per cent. of the quantity grown, however, is exported, the remaining 98 per cent. being consumed in India; and the value of the exports is actually less than that of the imports, despite the fact that they are very much greater in quantity. In 1930-31, the imports, manufactured and unmanufactured, amounted to approximately 5,000,000 lbs. valued at Rs. 1¼ crores, whereas the exports, although they amounted to over 29,000,000 lbs., were valued at only a trifle over Rs. 1 crore. The reason why so small a proportion of the total Indian crop is exported is that until very recently practically all tobaccos grown in India yielded a dark coarse leaf suitable only for smoking in the *hooka*, for making *bidis*,* for chewing, and for snuff-making. Attempts are, however, now being made to produce tobacco of better types

* An indigenous product serving the same purpose as a cigarette but covered with *tumuki* leaf instead of paper and producing a strong pungent smoke.

in India by scientific selection of indigenous varieties, by introducing good foreign varieties, by hybridisation, and by improving the methods of curing. Owing to the rapid spread of the cigarette-smoking habit throughout the world during the last decade or so, it would appear that the future prosperity of the tobacco trade in India must depend largely on the successful production of the cigarette type of leaf. A good deal of work has already been done in this direction at Pusa. Seeds from all the chief tobacco-producing localities in India were collected there in 1905, and the plants grown therefrom were separated into pure cultures and classified. At the same time a number of foreign varieties were tested. All the American varieties proved unsuitable to local conditions, chiefly owing to their relatively slow rate of growth and general lack of robustness. The Indian varieties gave more promising results, and many of those collected from Bihar gave good colour and flavour; all of them, however, were deficient in texture. Only one out of the 51 Indian tobaccos grown showed itself to possess anything like the desired combination of texture, flavour and colour when cured on racks or on the ground. This was known as " Pusa 28 ", which was derived from a sample of seed collected in South Bihar; it did fairly well when grown on a large scale under estate conditions, and some demand for its seed has arisen not only in Bihar but other parts of India. With the possible exception of " Pusa 28 ", however, none of the indigenous Indian varieties possess the qualities necessary for a good cigarette tobacco, that is to say a bright yellow colour, a mild flavour, good burning property, and the required elasticity in the cut. But if a good cigarette leaf could be produced in this country, it would find a ready and extensive market both for home consumption and for export. One of the best types of cigarette tobaccos grown in the U. S. A. is that known as " Adcock ", which forms the basis of some of the most popular brands of Virginian cigarettes in the world. It was first grown in India in the Guntur District of the Madras Presidency, where it was found to give a good yield and to cure to a fairly light colour. It is now cultivated on about 25,000 acres in this neighbourhood, and can compete with the cheaper grades of leaf imported for the manufacture of medium quality cigarettes. In 1924, experiments with " Adcock " were started at Pusa, and it was found to grow well there, provided that certain relatively simple changes in cultural

methods were adopted. Throughout this Province (Bihar) it was clearly demonstrated that climatic conditions at the curing season are such that flue-curing is essential for this class of tobacco; several flue-curing barns have accordingly now been established not only in North Bihar and the United Provinces but also in Madras, and there is reason to suppose that but for the onset of the present acute economic depression they would have done well. Experiments in this method of curing are also in progress in Bengal and at the Sa-aing experimental station in Burma. So obvious indeed are its advantages that it will probably soon supplant the old rack-curing method for the production of cigarette tobacco altogether,—though it is still questionable how far the manufacture of flue-cured tobacco of the Virginian type would prove profitable in some Provinces. Experiments in hybridization between Indian and American varieties have, however, progressed very satisfactorily of late, and it seems possible that research on these lines may in time result in the evolution of strains which would bring great prosperity to India. Crosses between the hardy and high yielding "Pusa 28" and the American "Adcock" have now been fixed and tested, and one of these, described as "Pusa 177" has given a leaf whose colour when fluecured was quite as good as "Adcock". High hopes are also entertained of two or three other hybrids which are being tried. Apart from the work in progress at Pusa, experiments on not dissimilar lines are being made in Bombay and Bengal. In the former Province the officers of the Department of Agriculture are attempting to improve a local variety known as "Gandiu 6" by hybridization with "Adcock" and "Bhengi". In Bengal, a good deal of work has been done on both exotic and *desi* types of tobacco and the demand for seed improved by the Agricultural Department is rapidly growing, notably for the types known as "Motihari" and "Bhengi". As regards the improvement of cigar tobacco in India, experiments are in progress in Madras, Bengal and Burma. Exotic varieties such as "Sumatra", "Manilla", "Vuetta" and "Pennsylvania" are being tested, the "Sumatra" leaf being grown for wrappers and the others for fillers. The results achieved hitherto show that this work is worthy of development. The next step appears to be to provide expert assistance in curing and blending the leaf. In Bengal, the experiments in cigar-making which had been in progress for some years at Rangpur were recently

transferred to Dacca, where there is now a factory turning out about 30,000 cheroots a month. The Agricultural Chemist there is also engaged in studying the nicotine content of a number of varieties of tobaccos and the relation between that property and the suitability of each variety for producing cigars, cigarettes and *hooka* tobacco. The Indian cigar-making industry is already of considerable importance both for domestic consumption and for export, but at present much of the leaf for wrappers is imported, and there is a great demand for more tobacco of good quality suitable for cigar fillers. As regards the production of tobaccos for use in *hooka*, and for *bidis*, chewing and snuff, the work in progress is more widely spread. Here the problem is chiefly to increase the yield per acre by using selected strains of indigenous varieties and by better cultivation,—points to which the various Agricultural Departments are devoting attention. Much progress has also been made in recent years in introducing better manurial and cultural methods for the tobacco crop.

This country is believed to be the original home of sugarcane, and the existence of a sugar manufacturing industry here can be traced back twenty-five centuries. At present India ranks second only to Cuba in the amount of sugar she produces, but the bulk of her produce is of an inferior kind. The area of cane grown annually varies between 2,500,000 and 3,000,000 acres, which represents about 25 per cent. of the total sugarcane acreage of the world. Three quarters of the area used for sugarcane lies in the three Provinces of Bihar and Orissa, the United Provinces and the Punjab, and as the cane harvesting season in these Provinces falls between the *kharif* and *rabi* harvests in months in which agricultural employment is generally small, little difficulty is experienced in obtaining labour for the work. The total yield of the crop reckoned as *gur* varies from 2,500,000 to nearly 3,250,000 tons and most of this is actually consumed as *gur;* only about 100,000 tons of the total annual crop are actually manufactured in refineries or central factories, though another 200,000 or 250,000 tons are manufactured by *khandsaris*. Practically none of the sugar produced here is exported, and at present about 1,000,000 tons annually are brought in from abroad. In comparison with other sugar-producing countries such as Java, Cuba, the islands of the West Indies, Mauritius and Hawaii, India is therefore, under the conditions which prevail throughout the world at present, very for-

tunately circumstanced, since she has a very large home market for her produce, whereas they depend for their prosperity largely on their exports. In spite of cheap labour, however, the costs of manufacturing sugar from cane here are much higher than elsewhere. For example, in Java, the cost of production is reckoned at Rs. 3·92 and in Cuba Rs. 4·95 per maund, while the corresponding Indian figure is Rs. 7·56. The amount of sugar extracted from cane under Indian conditions has until recently been very unsatisfactory. In 1919 the percentage of sugar manufactured from cane crushed was only 6·5. By 1929-30, however, it had been increased to 9, the highest figure attained by any one factory being 10·43. The improvement, therefore, has been substantial, though still considerably less than it might be. Satisfaction can also be derived from the fact that the number of modern sugar factories in India, making sugar direct from cane, has risen from 18 in 1919 to 30 in 1929-30, when in addition there were 14 refineries making sugar from *gur*. The state of the sugar industry in India was the subject of enquiry by the Tariff Board during the year under review, as we shall have occasion to explain in more detail elsewhere. Largely as a result of this enquiry the Government decided to increase the duties on imported sugar substantially,—a step which should enable India to compete on more favourable terms with other advanced sugar-manufacturing countries. An interesting development during the year was the grant of Rs. 8,000 *per annum*, made through the Imperial Council of Agricultural Research, to each of the three chief sugar-producing Provinces, in order to finance the designing of more satisfactory power crushing mills for village use. The area sown with scientifically improved varieties of sugarcane in the sugar-producing Provinces continues to increase. Particularly good progress was made during the year in the United Provinces, where the acreage covered with improved varieties amounted to 515,000 as against 281,000 in the previous year, the additional income obtained by cultivators as a result of using these varieties being estimated at Rs. 567 lakhs. The type known as " S. 48 " is probably still the most valuable variety in the Western parts of the Province and " Co. 213 " in the Eastern, but " Co. 290 " is rapidly increasing in popularity in the irrigated tracts. In the Punjab, three varieties evolved at the Imperial Sugarcane-breeding Station at Coimbatore, namely " Co. 205 ", " Co. 213 " and " Co. 223 ", have now largely replaced the

indigenous strains. In addition, " Co. 285 " and " Co. 290 " are rapidly coming into favour, more especially in the Gurdaspur, Sialkot and Jullunder Districts. The local types known as *dhaula, katha,* and *saretha* however still have considerable merits as early-ripening varieties, and may continue to be grown in many places. The total area covered with improved varieties in the Punjab now amounts to about 80,000 acres. To help to popularize these new canes, the Government supplied, for one year, free transport for small quantities of cane required by growers, on the understanding that the produce thereof would be used to propagate the crop. This concession was appreciated, and it is expected will lead to a considerable increase in the acreage laid down to improved varieties next year. In Bihar, the standard variety is " Co. 213 ", but " Co. 210 " and " Co. 214 " are grown on a considerable scale. Preliminary tests indicate that " Co. 287 " and " Co. 290 "may prove of value in North Bihar. " Co. 205 " is not popular with the managers of sugar factories in the Province owing to its hard rind, but it has proved of value in the low-lying and inferior lands. The area grown with canes in Bihar and Orissa amounts to over 80,000 acres. In Bengal, " Co. 213 " is rapidly replacing the variety known as " Tanna ", and in certain Districts cuttings of it have been given to cultivators free. About 74,000 acres of the sugarcane-growing area in Bengal are now planted with the improved varieties. Throughout India as a whole it is estimated that varieties selected at Coimbatore now cover over a quarter of the total area devoted to raising sugarcane, that is to say about 815,000 acres. All these strains yield more sugar per acre than the local types, the increase in some cases being as much as 20 or 30 per cent. At the Coimbatore Sugarcane-breeding Station some crosses have recently been made between sugarcane and *juar* (*Andropogon sorghum*). The results of this experimental success will be awaited with great interest, not only by producers of sugar but of fodder also. Officers of the Imperial and provincial Departments of Agriculture have been investigating the insect pests and fungoid diseases to which sugarcane is subject, among the former being cane-borers and white fly, and among the latter smut. The " mosaic " disease of sugarcane has also been receiving attention at Pusa, Lyallpur and elsewhere. Of primary importance is the selection of mosaic-resistant varieties for future introduction, and the rapid replacement of susceptible varieties wherever this is

possible. Control by roguing in a susceptible variety is difficult, and even in Northern India, where mosaic seems to spread more slowly than in the South, it demands a high degree of organisation. The Imperial Council of Agricultural Research has sanctioned a grant for five years for further investigations of this very troublesome disease.

Among the crops classified under the heading of oilseeds, groundnut is probably the most important. Within the last ten years the area sown with it has practically doubled, and now amounts to about 6,000,000 acres, the greatest increases having taken place in Madras and Bombay. Efforts to improve the varieties grown are being made in several parts of the country, particularly in the Central Provinces. Groundnut is frequently used in rotation with cotton, and in this capacity, being a leguminous crop, it is likely to play an increasingly important part in the agricultural system, particularly in Central India, for as we have already indicated the phenomenon of "shedding" in cotton plants is now known to be in large measure due to nitrogen deficiency. Apart from this the crop is valuable not only for its seeds but also for the fodder it provides. Special attention is being devoted by the Agricultural Department in the Central Provinces to the problem of selecting better strains of groundnut, and some very promising types have been evolved. The manurial requirements of the plant are also being investigated. The acreage grown with rape and mustard throughout the country, like that grown with groundnut, amounts to approximately 6,000,000 acres, of which 2,300,000 are in the United Provinces, 1,000,000 in the Punjab, 700,000 in Bengal and 600,000 in Bihar and Orissa. In the Punjab, the oilseed botanist during the year paid most attention to the variety known as *toria* (*Brassica napus*). In this plant he found that self-pollination is too infrequent to give a fair crop, and that while in sunny weather the activities of insects are sufficient to enable cross pollination to be successfully effected, this is as a rule not so under cloudy skies. It may now be possible therefore to predict the probable yield of the crop from the number of overcast days that occur during the flowering period. In Bihar, mass selection work on mustard is in progress. Botanical investigations of sesamum have been in progress at Pusa and the isolation of unit species has been completed. Some promising types have been isolated and the demand for improved seed is increasing. As regards linseed,

an important piece of research, establishing the possibility of combining the bold seed characters of the Central India type with the spreading habit of the shallow-rooted linseed of the Indo-Ganjetic plain has been successfully completed. In the Central Provinces a strain of linseed known as "E. B. C.", which was evolved by the Agricultural Department, has been found particularly suitable for local use and has been issued for multiplication.

In practically all provincial Departments of Agriculture, the importance of undertaking more thorough researches into the chemical, physical, and biological properties of the local soils has been appreciated in recent years, and a good deal of work has now been done in this direction. Apart from mechanical and chemical analysis, investigations have been made into colloids, soil acidity, the influence on plant growth of the rarer chemical constituents found in soils, and the problem of exchangeable bases. Extraordinary though it may seem to the non-agriculturist, very little is yet known of the relationship between the physical condition of the soil and its chemical constituents on the one hand, and the crop-yields on the other. But scientists in several of the Universities, with the assistance of funds derived from the Imperial Council of Agricultural Research, are beginning to undertake enquiries into these problems, and it is hoped that their work will yield valuable results.

As regards manures, the investigations which have been in progress in this country during recent years have been of great importance, though we cannot undertake in the space at our disposal to describe more than a few of the results obtained during the year under review. In the Central Provinces some interesting experiments have been conducted by the Agricultural Department with regard to the use of sann hemp as green manure for the rice crop. It has been demonstrated that sann grown on *rabi* land, if cut and applied to paddy before transplanting, serves as an efficient substitute for farmyard manure, and that if it is used in conjunction with superphosphate the effects on yield are remarkable. The practical application of the experiments is however limited by the difficulty of growing sann *in situ*, whether at the end of the rains or with the assistance of irrigation in May. In Bengal, two fertilisers,—ammonium sulphate and diammonphos,—were tried out on jute and paddy among the cultivators of the Northern and Eastern Districts during the year, and both of them

proved useful, though, at present prices, diammonphos was considered too expensive to be a paying manure for paddy. Some interesting experiments were also made in the manufacture of what is known as artificial farmyard manure from waste organic matter. In Burma, among the investigations undertaken by the Agricultural Chemist was one upon the response of soils to leunaphos and diammonphos. Mandalay paddy soils were found to respond well to both these fertilisers, but the former showed itself the better. On Mudon paddy soil, leunaphos was unsuitable, but diammonphos gave excellent results. The Akyab paddy soil occupied a position intermediate between Mandalay and Mudon soils. It was evident from these trials that substantial advantages can be gained at any rate by the use of diammonphos, though care must be taken to see that the water is properly drained off the fields before this fertilizer is applied, and that it is incorporated in the soil immediately afterwards. In addition to the demand which is developing locally for fertilizers of this type, bonemeal is now extensively purchased as a result of successful demonstrations carried out with it in previous years. In the Madras Presidency, the Agricultural Chemist studied the influence of sodium nitrate or other sodium salts on the clay complex of the soil, the effect of repeated application of manures over a long period, the movement of nitrates in the soil, and various other problems. The practice of treating paddy with green manure is increasing throughout the Presidency. A certain amount of bonemeal is now being used, and sales of artificial manures are on the increase. In the United Provinces, the manures distributed during the year,—consisting chiefly of castor cake, *neem* cake, *mahua* cake, sulphate of ammonia and nitrate of soda,—amounted to 31,600 maunds, as against 18,800 maunds in 1929-30. The manurial experiments conducted were very numerous. Investigations were begun on the effect upon wheat of ammonium sulphate, leunaphos and sodium nitrate, and so far the best results appear to be obtained from sodium nitrate, though further work will be required to confirm this. Experiments were made with mustard cake and castor cake on sugarcane, and numerous trials were made with a number of manures other than those already mentioned,—such as calcium cyanamide, saltpetre, superphosphate, nitrate of chalk, diammonphos, wool waste, cattle dung, and *poudrette*,—on a variety of crops. The effects of green manuring with sann were also investigated, as in the Central

Provinces. In Assam, oil cakes in combination with various phosphatic and nitrogenous manures were applied to sugarcane and gave good experimental results. In Bihar and Orissa, ammonium sulphate is extensively applied to the sugarcane crop, and the use of ammophos is increasing. In the Bombay Presidency, experimental applications of different quantities of farmyard manure to the *juar* crop again indicated that about 10 tons per acre is the correct amount to use. A useful fact discovered was that sann used as green manure appears often to prove an efficient substitute for farmyard manure. In the Punjab, good results have not hitherto been obtained by the application of phosphates and potash. Nitrogenous manures, and recently the new ammonium phosphate manures, have been more promising, but more investigation is necessary. An expert Manurial Committee was constituted in the Province during the year to advise upon all manurial experiments planned by the Agricultural Department, in order that the results may be more effectively co-ordinated; and the Committee has now worked out a scheme of manurial trials for a number of years from which it is hoped to discover what types of manures are most suitable for different localities in the Province. The extent to which the demand for artificial manures is increasing throughout India, largely owing to the efforts of the provincial Agricultural Departments, is demonstrated by the following figures. In 1925-26 imports of artificial manures into this country totalled 21,590 tons. In 1926-27 they amounted to 26,850, in 1927-28 to 35,710, in 1928-29 to 58,930, and in 1929-30 to 74,890 tons. There was a sharp but inevitable drop during the year under review, owing to the collapse that occurred in the value of agricultural produce, but the imports nevertheless reached the respectable total of 51,000 tons.

A good deal more attention has recently been devoted in India to the effects of climate on the yield of crops. In some Provinces the principal farms are now fitted with meteorological apparatus which records the humidity and temperature of the atmosphere and the temperature of the soil at various depths. Apparatus to record the direction and velocity of winds is less used, owing to its relatively high cost, but useful results are likely in time to be obtained with the assistance of the Meteorological Department, which has recently undertaken work with the object of forecasting crop yields by correlating climatic observations.

Steady progress was again reported from most Provinces in the introduction of improved implements into agricultural practice. The number sold to cultivators during the year, omitting spare parts, amounted according to the records kept by the Agricultural Departments to 49,000, as against 41,500,—a really remarkable figure in view of the acute agricultural depression that prevailed. These totals of course by no means cover all the improved implements sold, for in several Provinces a large part of the supply has now been taken over by private enterprise, and the sales effected through the Agricultural Departments largely represent no more than the first introduction of improved types into new areas. The figures given are however sufficient to indicate that very gratifying progress is being made with this aspect of the Government's activities on behalf of agriculture. The implements distributed included ploughs, cultivators, harrows, hoes, seed drills, and cane crushers. As usual, ploughs achieved the largest sale in most Provinces, but in the Punjab fodder cutters were in greater demand,—no less than 14,250 of them being purchased, as against 7,340 in 1929-30 and 3,480 in 1928-29. The main reason for this remarkable development is the recognition by the Punjab cultivators that if fodder is cut by these machines, the farmer can reduce the amount of feed given to his animals by 10 per cent. and get as good results as before; indeed, in some localities, where it is the custom to tether cattle amongst standing fodder crops, the saving in fodder is far greater than this. These fodder cutters are now being made locally in large numbers and are being sold from about Rs. 20 each upwards. Improved ploughs, harrows, hoes, water lifts and even small oil-engines are also being made locally to meet the growing demand. In Batala, (Gurdaspur District), there are now about 30 factories turning out these articles to the value of about Rs. 5 lakhs per annum, for sale not only in the Punjab but elsewhere. If efficient implements can be supplied at low prices they are of the utmost value to the ordinary farmer; weeds which rob the soil of its salts and moisture can be eradicated, the costs of crop production reduced, the amount of fodder increased, and so forth. Officers of the Agricultural Departments in several Provinces have set themselves the task of evolving such implements, and in many parts of the country implements of the plough, cultivator and hoe types have been successfully designed which cost only a few rupees each and are specially suitable for localities



IMPROVED PLOUGH AT WORK, WITH A TRACTOR, AT PUSA.

where the bullocks are not strong. In the Madras Presidency, where the distribution of ploughs was handed over by the Agricultural Department to private agencies, the trend of events in recent years has been disappointing. The sale of ploughs and spare parts was reported in 1930-31 to have fallen to about half what it was in 1924, and complaints are frequently heard that the cultivators' needs for spare parts are not properly met. The question how to improve the situation is under consideration. In Bengal, a plough, designed by the local Agricultural Department is increasingly in demand, and for the first time it can be said that there are prospects of the Bengal cultivator taking to an iron plough. In Bombay, a drill for sowing cotton and *juar* evolved by the Agricultural Department, and a potato digger modified for uprooting groundnut, were tried, but it was found that further improvements will be necessary before they are altogether suitable to local conditions. Work on tractors was continued in the Bombay Presidency. In the Northern part of Bihar and Orissa, tractor cultivation has been developing very rapidly in Muzaffarpur, Darbhanga and Champaran Districts, and over 200 tractors are now reported to be working there. Conditions are peculiarly suitable for tractor cultivation in this particular area, however, and it is unlikely to prove equally popular in other parts of the Province at present. The Central Provinces contain about 50 privately owned tractors, but only about 60 per cent. of them are operated by their owners. Many of the remainder are laid up owing to the difficulty of obtaining efficient drivers. To enable this problem to be overcome, the Agricultural Department has been giving instruction on the management of oil engines and tractors. Steam-ploughing tackle continues to be much in demand for eradicating the troublesome *kans* grass and restoring production on lands infested with that destructive weed. But the type of steam-tackle available does not seem altogether suitable to Indian conditions. A new type of tractor run on crude oil fuel is however coming into the market and may alter the situation considerably. As has already been mentioned, the Agricultural Departments of Bihar and Orissa, the United Provinces and the Punjab continue to experiment with small power-driven sugarcane crushing, mills. At present there is no really satisfactory small crusher on the market, and as soon as the area under improved canes in the remoter villages becomes large, the growers have considerable difficulty in

treating their crops with the cattle power available. Already, however, an improved crusher designed in Bengal with the assistance of the Imperial Council of Agricultural Research promises to be considerably more satisfactory than any plant at present on the market, and further developments are likely.

Apart from their work in connection with the introduction of better implements, the provincial Agricultural Departments are also assisting the cultivator in various branches of agricultural engineering. The improvement of irrigation wells and the construction of strainer tube-wells is proving particularly important. In the Punjab, 84 boring plants were at work during the year, being used chiefly to augment the supply of water in ordinary wells by tapping lower water-bearing strata. No less than 935 wells were bored in this way and 786 of the borings each caused an increase of 25 per cent. or more in the original water-supply. The total number of running feet bored was 71,716. The Agricultural Engineer has further improved upon his earthenware slip-strainer by inventing a composition slip-strainer which can be still more easily and cheaply made. These strainers have in many cases enabled the yield of the wells to be augmented by 100, 200, and even 300 per cent., and as a result, a demand has been created for small power plants to deal with the increased supply. In Bombay, 57 machines were at work during the year and made 318 borings, the number of running feet bored being 22,678. The provincial Department of Agriculture estimates that as a result of its endeavours to improve the water-supply during the last 21 years, the yield of the wells in the Presidency has been increased by about 3,136,277 gallons per hour. In 1930-31 some 4 machines for locating underground water were in operation and 746 sites were located, chiefly in Poona and Sholapur Districts. In the United Provinces, attention has been concentrated chiefly on the construction of tube-wells, 42 of which were completed during the year. Large sums of *takavi* were given by Government for this purpose. In Bihar and Orissa, it is reported that 238 small borings were sunk to augment the water supply in existing ordinary wells, the number of running feet bored being 22,721; in addition, 24 tube-wells were sunk, the amount of boring involved amounting to the exceptional total of 3,343 feet. In times of depression, such as the present, well-boring is one of the most beneficent of all the activities of the Agricultural Departments, especially in those regions

where rainfall is scanty and variable, since to increase the well water is the most certain way of securing crops for small landholders and preventing the development of famine conditions. In many Provinces, much is also being done to cheapen the cost of raising water by designing more efficient water lifts.

During the year under review demonstration work and propaganda was continued by the Agricultural Departments on approximately the same lines as before. Ocular demonstration of the direct advantages of the new methods from the point of view of the cultivator's own local requirements is the fundamental principle underlying these activities. In India, unlike some other countries, relatively little can be done either by the supply of popular literature or by lectures,—although as subsidiary methods of propaganda the distribution of vernacular leaflets in simple language, and the use of the cinematograph and the magic lantern have not been neglected. In most Provinces moreover the important fairs and festivals are attended by officers of the Agricultural Departments, and exhibits are shown and lectures given. But the village demonstration plots remain by far the most important means of agricultural propaganda. In some of them, activity is directed chiefly towards demonstration carried out on the cultivator's own land, the departmental demonstrator supervising the actual details of the improved method, whatever it may be, and leaving the general cultivation to the cultivator himself. In others, the tendency is to rent plots of land and carry out all operations under the supervision of the demonstrator,—a method which is particularly valuable when a combination of improvements have to be displayed. In either case, of course, the object is to demonstrate a fact which has already been proved, and not to elicit a fact, and it is therefore unnecessary to give the same care to demonstration plots as to experimental plots; all that is required is to see that the work is done intelligently enough to give it a fair chance of success. Departmental demonstration farms also play their part in the organization, and in addition there are the district or subdivisional farms, which besides providing the means for experimental work, serve as centres for the distribution of improved types of seed and as headquarters for the district agricultural staff. Experimental work conducted on district farms is of the utmost value. Records of the quality of the local soils and the performance of each test plot can be systematically made, and the

growing crop can be given the constant skilled attention which is essential if accurate results are to be obtained. If these farms a provided with a suitable technical staff, and equipped with a laboratory, knowledge of what is practicable under local conditions can be acquired much sooner than would be possible by any other means, and time and money can thus be saved. Closer relations have been established within recent years between the Agricultural Departments and various co-operative organizations, both in regard to propaganda and the production and distribution of improved seed and implements; the distribution of seed, in particular, has lately been considerably facilitated by an extension of the activities both of registered co-operative societies, or seed unions, and of registered private seed growers who co-operate with the Agricultural Departments.

The reports received from the various Provinces concerning the progress of demonstration work are of considerable interest. In the Madras Presidency, the total number of fairs and festivals attended by members of the Agricultural Department was over 200. Two exhibition vans toured the Presidency during the year and aroused great interest among the villagers,—though the Director points out that the assortment of exhibits must be changed frequently if interest is to be maintained. Propaganda was conducted with regard to the use of the more efficient implements, drill-sowing of cotton, the reduction of seed-rate, line-planting of sugarcane, the manuring sugarcane and paddy, and the value of improved varieties of cotton, *juar*, *ragi*, potatoes, and sugarcane. In the Central Provinces, there are now demonstration farms in all but two Districts, the total number of special plots under cultivation during the year being 54, of which only 33 were in Government farms. Much less difficulty has recently been experienced in obtaining the use of private plots, and indeed the number of plots offered during 1930-31 was greater than the Department could undertake to run. The staff engaged in demonstration work in the Province now amounts to 67 assistants and 102 *jamadars*, and there is an increasing demand for their services. Excellent results have been obtained from the use of the departmental cinematograph lorry which started demonstrations in 1928-29. It is provided with a portable engine which not only generates the current for the cinema, but is used to operate pumps and fodder cutters. The keenest interest has been displayed in it by the

cultivators and hundreds have come to see it at each place it has visited. A remarkable result of the propaganda conducted in the Central Provinces has been the establishment of hundreds of small unions among the cultivators for the distribution of improved varieties of seed. The total amount of such seed distributed during 1929-30 was 164,589 maunds, as against 117,125 maunds in 1928-29, and the distribution of at least 25 per cent. of it was undertaken by the small local unions. In the Punjab, the specialist officers of the Department as well as the district staff now give lectures at practically all meetings of the district agricultural associations, and the members are thus kept in touch with the latest developments. The majority of the associations in the Province are doing very well and render most useful services to agriculture. During the year, ploughing matches were held at all important fairs in the Province, and a hundred cinematograph shows were given, supplemented by lectures on such subjects as the life history of certain pests and the value of improved seeds and implements. As usual, carts equipped with sets of implements, each in charge of a *mukaddam*, moved about in the various Districts, and some improved implements were also lent to farmers for experimental purposes. The number of demonstration plots on farmers' fields was 2,316, all of them being laid out in long narrow strips of not less than 1/10th of an acre in area. Campaigns for the eradication of the *pohli* weed, which proves extremely troublesome in certain places, were successfully organized. The agricultural stall in the Lyallpur market which was started in 1928, is proving very effective as a means of bringing agricultural improvements to the notice of farmers, and has incidentally also increased the Agricultural Department's facilities for obtaining information of commercial interest. In the Bombay Presidency, there are now 84 agricultural associations in existence, and many of them are doing useful work. In Sind, active propaganda was carried on through the *taluka* development associations, chiefly with regard to improved strains of cotton, wheat, and rice, and improved implements. In the Ahmadnagar District, mass propaganda was attempted from 42 centres, and the demonstration plots proved particularly successful. The first market regulated under the Bombay Cotton Markets Act was established at Dhulia during the year under review and made a good start despite difficulties. In times of agricultural depression, the establishment of markets of

this sort, which are designed to ensure for the farmer the maximum profit from his crop, is obviously very important. In Bihar and Orissa, the number of demonstrations given during the year was over 6,000, and dealt with the cultivation of sugarcane and wheat, the merits of artificial manures such as ammonium sulphate and ammophos, and the potentialities of improved types of sugarcane and groundnut. About 6,450 maunds of improved seed were supplied to cultivators by the Agricultural Department. Arrangements have now been made in the Province for registering growers of improved seeds, particularly rice and wheat. Effective cooperation is maintained between the co-operative societies and the Agricultural Department. In Burma, improved seeds of rice, cotton, groundnut, sesamum, beans, gram, wheat, millet, sugarcane, and other crops were distributed during the year. The demand for new varieties of rice in particular continues to expand,—some 6,333,000 lbs. of seed having been given out as against 5,968,000 lbs. in the previous year. Improved varieties of agricultural implements also proved popular, the number of ploughs distributed through the agency of the Agricultural Department having been over 1,000, as against 960 in the preceding year. Satisfactory results were also reported from the use of demonstration plots. In Bengal, useful propaganda work continued and there was an increase in the number of private farms on which the methods advocated by the Agricultural Departments are practised. Local paddy badly affected by a fungus known as *Sclerotium oryzae* was replaced by a specially resistant variety evolved by the Agricultural Department on an area of over 20,000 acres. In Assam, superior strains of paddy, jute, potato, sugarcane and tobacco were brought to the notice of cultivators in areas where they are not yet cultivated, and demonstrations were made to show the effects of using bonemeal and sodium nitrate, the best method of eradicating water hyacinth, and the capabilities of improved implements. About 230,000 lbs. of seed potatoes were supplied to cultivators by the Agricultural Department during the year. Owners of private farms in Assam have recently shown much more willingness to help the Agricultural Department, and arrangements are being made to grow improved seeds on some of these farms under departmental supervision. The work of the Department has proved of great value to the cultivators when the floods to which Assam is always liable devastate their crops, and after the recent

Surma Valley flood large quantities of fresh seed were distributed.

The successful introduction into agricultural practice of so many of the scientific improvements effected by the Agricultural Departments, has of course been greatly assisted by the spread of education. Even in vernacular middle schools, children are now shown simple experiments on plant growth and so forth, and there is now a greater readiness, amongst those masses of the younger generation who have never reached the matriculation standard, to listen to the advise of the agricultural demonstrators and believe it possible that applied science may have some uses for them. Formerly the chief difficulty with which the officers of the Agricultural Department had to contend, in touring the countryside, was the apathetic conservatism of the cultivators, who considered all innovations in agricultural methods futile if not dangerous; but this attitude of mind is now less prevalent. Boys who have had training on Government farms can explain to others the material benefits obtainable from the use of modern discoveries, while those who have been through a college course for the B.Sc. Degree or the Diploma in Agriculture have learnt enough to enable them to form independent opinions on the agricultural problems that arise around them. By these educational means, and the fact that many farmers have profited financially by making use of the improvements placed at their disposal by the Agricultural Departments, the views of the cultivators on the value of scientific methods have changed in a way which a quarter of a century ago would have been considered quite impossible. In many districts it has now been possible for officers of the Departments to set up associations, composed mainly of farmers, to consider local needs and assist in the introduction of better agricultural methods. Moreover the tendency, which has been noticeable for some years, for courses in subjects connected with agriculture to be introduced into the curricula of schools,—or even for new schools to be founded whose primary object is to give instruction in the agricultural sciences,—is becoming more pronounced. In the United Provinces, it was reported during the year under review that the Government intend to start classes in agriculture at vernacular middle schools and assist District Boards to select suitable sites for the school farms. In the Bombay Presidency, there appears to be a spontaneous popular demand for the establishment of agricultural schools. In Ratnagiri District, an organization known as the Shikshan

Prasarak Mandal of Rajapur founded a school during the year with a graduate in agriculture as headmaster; and the six agricultural schools recently established in the Presidency continued to do remarkably well. At the Loni school there were 73 applications for the 22 vacancies available, while no less than 127 applications were made for the 17 vacancies at the Devi-Hosur school. It is gratifying to note that of the total of 194 students who have passed out of the latter school, 115 are now working on their own farms. It should be mentioned also that a number of other schools in the Presidency have recently given an agricultural bias to their curricula. In Bengal, 15 teachers have been under training at the Dacca agricultural school in connection with the scheme for introducing agriculture as one of the subjects of study in secondary schools, and have now returned to their own institutions and taken charge of the classes in agriculture. During the year an officer of the provincial Agricultural Service was appointed inspector of agricultural schools and has started his work of organising classes, laying out school farms, and so forth. The instruction in agricultural subjects provided in secondary schools appears to be proving popular in Bengal, and a number of high schools and middle schools have now started giving it. On three Government farms, primary schools have been opened, in which elementary instruction in agriculture will be given. In the Punjab, 25 senior certificated teachers of the Education Department took the course qualifying them to teach agriculture in vernacular middle schools. There are now 143 middle schools teaching agriculture in the Province, which are run by the Education Department with advice from the Agricultural Deparment. In the Central Provinces, agriculture has been introduced into the curriculum of various types of schools. The school at Powarkhera, in Hoshangabad District, is probably the most popular, though the type is admittedly expensive. It is not dissimilar in constitution to the better type of Anglo-vernacular middle school in which agriculture is taught in the Punjab, most of the boys being resident. In Madras, the agricultural middle school at Taliparamba, which was opened in 1922 as an experiment, has now turned out 104 students, but of the 90 who passed out prior to the year under review, only about 35 are engaged in agricultural work. This type of school therefore evidently does not appeal much to the local cultivators. Another school at Usilampatti, which is primarily intended for the backward

caste known as Kallars, was opened during the year and 14 boys, 13 of whom are Kallars, were admitted to it. Schools for juvenile and adult farm labourers at Anakapalle, Coimbatore and Palur were continued during the year. These schools are intended to provide a general agricultural education for the sons of labourers who would not otherwise go to school, and appear to be fulfilling their object.

The facilities provided for University education in agriculture are also being improved fairly rapidly. As was explained in our last Report, all the specifically agricultural colleges in India except that at Mandalay have now been affiliated to Universities. In the United Provinces, as a result of the affiliation of the college at Cawnpore to Agra University, the teaching staff is to be strengthened by a Professor in entomology, plant pathology, dairying and animal husbandry, and economics. The number of students doing practical work for whom a single teacher will be responsible has been reduced, and substantial improvements have been made in the apparatus available for experimental work. One of the advantages of the affiliations which have been effected is that Indian students of agriculture, after completing their ordinary studies, are now in a better position to obtain admission to other institutions in order to undertake research, and increasing numbers of graduates in agriculture from this country are now tending to complete their studies abroad. In some agricultural colleges a degree of Master of Science in Agriculture is now being conferred. Although the number of students applying for admission to the B.Sc. (Agri.) Degree courses at the various colleges has decreased somewhat during the last year or two, owing to their being fewer posts available for graduates as a result of the prevailing financial stringency, there are still far more applicants than can be accommodated, and agricultural colleges are filled to overflowing. An encouraging development is the increasing demand for the services of agricultural graduates which has recently been forthcoming from private employers and from Government Departments whose work is in some way connected with agriculture. The hope expressed in our previous Report that it might be possible to start the Engineering, Dairying, and Animal Husbandry Sections of the Agricultural Institute at Dacca during 1930-31 has not been fulfilled, but a workshop for the Agricultural Engineer, so designed as to be capable of extension, when circumstances are more

favourable, into the Institute workshop, has been finished. At Pusa, the Imperial Institute of Agricultural Research continues to furnish facilities for post-graduate studies. In the agricultural colleges of some Provinces, short simple courses in general practical agriculture are given to men of whom large numbers subsequently qualify for posts as overseers under the Department. Instruction in the running and maintenance of internal combustion engines, and in the maintenance of modern agricultural implements, is also given to village blacksmiths and others,—the adoption of modern agricultural methods in some rural areas having hitherto been seriously handicapped by the dearth of qualified mechanics; courses in entomology, fruit-culture and sericulture are held for the younger generation of cultivators; and lectures in general agriculture are also given to officials in other Departments.

Incidental reference has already been made to the activities of the Imperial Council of Agricultural Research, which was established during the period covered by our previous Report, largely as a result of the recommendations made by the Royal Commission on Agriculture in 1928. Since 1920, when Agriculture was made a "transferred" subject under the Montagu-Chelmsford Reforms, the need for some organisation which would co-ordinate and encourage the work of provincial Departments of Agriculture and Animal Husbandry had become increasingly apparent. There was, it is true, the Board of Agriculture in existence,—a body composed of officers deputed by local Governments and a few non-officials; but it disposed of no funds, and had no recognised position *vis-a-vis* the Agricultural and Veterinary Departments. Again, with reference to the new autonomous Departments of Agriculture in the Provinces, the position of the Agricultural Adviser to the Government of India, under whom were placed the Imperial Institutes of Agricultural and Veterinary Research at Pusa and Muktesar, had become somewhat anomalous, for constitutional reasons; moreover it was in any case hardly possible for one man to have such varied scientific knowledge and experience as would induce provincial authorities to accept his guidance to the extent necessary if proper co-ordination was to be achieved.

The Royal Commission on Agriculture considered that this difficulty could only be met by creating a special organization containing representatives of the Provinces which would be endowed with adequate funds for fostering agricultural and veterinary

research; and after the project had been carefully considered by the Government of India the Imperial Council of Agricultural Research was duly established in the summer of 1929. The Council consists of an Advisory Board and a Governing Body. On the Advisory Board are the heads of the Agricultural and Veterinary Departments of all the Provinces of British India and of such Indian States as have elected to join, together with representatives of Indian Universities, of the Co-operative Societies, of the Indian Central Cotton Committee, and a few other members. The Governing Body is composed of provincial Ministers of Agriculture, three representatives of the Indian Legislature, two representatives of commercial interests, and two members elected by the Advisory Board, and is under the chairmanship of the Member of the Viceroy's Executive Council responsible for matters connected with agriculture. The Governor-General in Council has the right to nominate additional members both to the Advisory Board and to the Governing Body when need arises. At the outset this power was found useful for giving representation to the State of Hyderabad, which elected to join the Council in 1929, and more recently, representatives of the Railway Board, of the Army Veterinary Department and of the Veterinary Department in the North-West Frontier Province have also been added to the Board. The Board is intended to examine and make recommendations on schemes of research submitted by provincial Governments, Universities or private institutions, and its recommendations are then submitted to the Governing Body. It is the Governing Body which has control of the Council's funds, which consist of single and recurring grants made by the Government of India and from other sources. During the period under review, with the exception of a donation of Rs. 2 lakhs from H. E. H. the Nizam of Hyderabad, the funds were derived entirely from the Government of India.

As was explained in our last Report, and as has already been indicated in the preceding pages, the Council immediately after its establishment appointed a Committee to consider means for assisting the Indian sugar industry. This Committee had held three meetings by the end of the period under review. Among its recommendations the most important probably was that the Government of India should be asked to institute an enquiry through the Tariff Board on the question whether the Indian industry should be granted protection. This recommendation was accepted by the

Council and the Government of India ordered that the enquiry should be made. As will be explained in Chapter VI, the Tariff Board's report had not been fully considered when the year we are considering came to a close, but the duties on imported sugar were nevertheless raised at the beginning of the financial year 1931-32. The Council has also accepted all the other major recommendations of the Sugar Committee, as, for example, those providing for the establishment of a chain of sugarcane research stations in the chief sugar-growing Provinces; the appointment of a sugar technologist to advise existing and prospective sugar manufacturers in India; and the endowment in collaboration with the Government of the United Provinces of a model sugar factory at the Harcourt Butler Technological Institute.

From sugar the Council turned its attention to locusts. In 1929 the Northern and North Western parts of the country were subjected to one of the periodic visitations of locust swarms from which they have suffered so seriously in the past. It was realised that little could be done to cope with a locust invasion in its later stages, and that control could only be effective if established at the start. A committee was accordingly set up under the Board of Agriculture to discuss methods of investigating the biology of the insect and to make suggestions for controlling its incidence. This committee made several important recommendations but before they could be considered by the Imperial Council of Agricultural Research information was received early in 1930 that another locust visitation had begun. A new and enlarged committee was promptly convened which made recommendations for measures of control upon which the Council took immediate action. With the co-operation of the Governments of the United Provinces and the Punjab, arrangements were made to have warnings of the visitation of locust swarms transmitted by telegram to the Locust Bureau which the Council established under the charge of a Locust Entomologist. These warnings were then broadcasted to all the other authorities concerned. A pamphlet explaining in simple language the measures of control which should be undertaken in the affected areas was published in several languages and extensively distributed. It was from the first realised that endeavours to control the pest in British India would be of little avail unless they were also adopted in the neighbouring Indian States, and H. E. the Viceroy in his speech to the Chamber of Princes in February 1930

made an appeal to the Rulers for their co-operation, and their response was prompt and encouraging. Almost every State concerned took such measures recommended by the Locust Committee as were within its means, and the services of the Locust Entomologist of the Council were requisitioned by many of them in order that their officers might obtain instruction in the measures they should adopt. The results obtained by the activities of the Council with regard to the locust menace in 1930 give cause for much satisfaction and augur well for the future.

The Council has also devoted a good deal of attention to the problem of improving the yield and quality of India's most important food crop, namely rice. In December 1929, at the first meeting of the Advisory Board, a scheme for rice research in Bihar and Orissa was submitted, but it was considered best to postpone consideration of it until the meeting in the following June, in order that corresponding schemes might be prepared by all the rice-growing Provinces. At the June meeting proposals from Assam, Bengal, Bihar, Burma, the Central Provinces and Madras were considered by a special Rice Committee appointed for the purpose. A scheme from the United Provinces was subsequently added and worked into the co-ordinated scheme, whose total cost, after it had been subjected to scrutiny by the Advisory Board, was estimated to amount to Rs. 11,22,408. As we have already indicated, the Empire Marketing Board was asked to contribute about a fifth of this sum, the intention being that the remainder should be provided by the Imperial Council of Agricultural Research. There is good reason to suppose that the scientific work already in progress on the rice crop throughout the country will be greatly facilitated by the co-ordinated programme of research which has now been devised.

The investigation of problems relating to the conservation of indigenous manurial resources and the use of fertilisers has also been considered by the Council, and a committee appointed to deal with these matters met in June 1930. It was felt, however, that satisfactory progress would be difficult until data on manurial experiments carried out in the Provinces in the past had been collected and correlated. For this purpose the Fertilizers Committee recommended that a small grant should be made to each Province, and this the Council has now sanctioned. As it will naturally take some time before the information required from the Provinces

is obtained, the first meeting of this committee was no more than exploratory. Nevertheless, the consideration of manurial problems by those interested is likely to prove of value in the future. Almost every member of the committee undertook in the interval before the next meeting to investigate and report on some point which had emerged during the discussion.

It has always been the intention that the Council should enlist the assistance of non-official as well as official agencies in the furtherance of agricultural research, and among the former the Universities are probably the most important. Soon after it was established the Council made known to various University authorities that it would be glad to consider any schemes for research in agriculture which they might put forward. As a result two applications for grants from University workers were sanctioned at the very first meeting of the Council. Since then several other applications have been received and considered. The University representatives on the Council's Advisory Board amount to four, and the Research Committees in the Provinces also have University representatives. The Council has already obtained much useful assistance from University workers on the committees it has appointed, and also in connection with its publications. Among the Council's functions is the dissemination and exchange of scientific information, and for this purpose it undertakes to provide facilities to enable workers in India to attend Imperial and International Conferences, to subscribe to Imperial and International Institutions which purvey information on agricultural and veterinary matters, and to issue publications on its own behalf. A considerable amount of work has already been done in all these directions. As regards publications, before the Council was created the Imperial Institute of Agricultural Research at Pusa used to be responsible for issuing two periodicals, namely the *Agricultural Journal of India* and the *Journal of the Central Bureau of Animal Husbandry and Dairying*, and also for the publication of occasional Memoirs and Bulletins. The Council took charge of these activities in 1929 and replaced the two original publications by three others, known as the *Indian Journal of Agriculture and Livestock*, the *Indian Journal of Agricultural Science*, and the *Indian Journal of Veterinary Science and Animal Husbandry*. The second and third of these are actually intended for the publication of scientific papers which might otherwise have been issued as Memoirs and



COWS GRAZING AT PUSA.

Bulletins, while the first alone, which has a wider popular appeal, covers approximately the same ground as the two periodicals formerly issued from Pusa.

Research in animal husbandry has not yet obtained so large a share of the Council's funds as might have been expected. The reason for this requires some explanation. After the war, the Veterinary Departments were disorganised much more than the Agricultural Departments by the difficulties through which the country passed at that time, since their financial position had always been relatively weaker, and they were thus far less favourably circumstanced, when the Imperial Council of Agricultural Research was established, for taking advantage of the financial facilities which it offered. Not only have the Veterinary Departments in India for many years been greatly undermanned, but the existing veterinary colleges have been compelled by circumstances to adopt comparatively low educational and scientific standards for their graduates. Until these Departments can be staffed with a sufficient number of adequately trained men, it is therefore to be expected that acceptable suggestions from the Provinces for conducting research in veterinary science and animal husbandry will be comparatively infrequent. During the period under review, developments of considerable importance were expected to result in time from the work of the Expert Adviser to the Council in Animal Husbandry, who reached India in April 1930, and two schemes for the appointment of research officers at the Imperial Institute of Veterinary Research at Muktesar were sanctioned in principle; but the obstacles confronting those responsible for devising means for improving India's livestock are so stupendous that progress must necessarily be slow. Before we proceed to indicate what has actually been done during 1930-31,—whether with the assistance of the Imperial Council of Agricultural Research, or independently, by the provincial Departments of Agriculture,—it will be advisable to devote a few paragraphs to indicating the nature of the difficulties that are involved.

As we have seen, the total number of livestock in British India is estimated to be about 218,000,000, and the vast majority of these animals, for reasons which we have already indicated, are deplorably inefficient. There is no doubt that, if the process of degeneration to which the report of the Royal Commission on Agriculture drew public attention is to be effectively arrested, animal husbandry work will have to be organized on a far broader

scale than it has been in the past. As compared with other large stock-owning countries, the care and development of livestock in India has always been most inadequately financed. In 1930-31, for example, the U. S. A., which possesses a somewhat smaller number of domesticated animals of commercial importance than India, allotted the equivalent of Rs. 4,48 lakhs to its Federal Bureau of Animal Industry alone, while a far greater aggregate sum than this was spent on the Animal Husbandry Services of the 47 constituent States of the Federation. In British India, the corresponding budgetary provision was roughly Rs. 14 lakhs from Central, and Rs. 78 lakhs from provincial funds. Yet despite the admitted inadequacy of these sums, and the obvious inefficiency of a very large proportion of the country's livestock, they nevertheless even now constitute by far the biggest individual asset she possesses. How immensely important it is that the deterioration which they are undergoing should be arrested will be realized from the following figures. The value of the work performed under existing conditions by cattle in India, to agriculture alone, is reliably estimated to have exceeded Rs. 600 crores last year, and to this sum must be added the value of the manure and other products of animal origin,—such as hides and bones, and milk and dairy produce generally, whether consumed in the country or exported,—which is believed to have amounted to over Rs. 1,000 crores. Irrespective therefore of their essential importance to the health and development of the people, the money-value to the agricultural community of the products of the cattle now maintained in India appears to be even greater than that of the total output of agricultural produce not derived from stock, which was recently estimated by the Indian Banking Enquiry Committee to amount to Rs. 1,300 crores per annum. In addition, the value of the products of its 66 millions of other farm animals must amount to a great many crores of rupees, as also must that of the work done by cattle throughout India for non-agricultural purposes, while the cash profits made from the sale of all classes of livestock throughout the country must similarly be very great. Yet it is unquestionable that, vast though these figures are, they represent but a portion of what they might be were it possible to devote to the country's livestock the finances and scientific attention they deserve.

So immense, however, are the problems with which the authorities are confronted in their endeavours to increase the efficiency

of India's domesticated animals that much of the work undertaken on the scale practicable hitherto can have little lasting effect upon them. This is true, for example, of much of the selective breeding which has been done under Government auspices. Even in the Punjab, where the number of bulls produced on Government stock-farms is far greater than elsewhere, only about 5 per cent. of those in service throughout the Province have been specially bred or selected for stud purposes. Exclusive of the Punjab, the proportion of improved bulls in service throughout India amounts to only about 1/1000th of what are actually required for the number of cows maintained. The beneficial effects of such a small leavening as this on the total bovine population of the country must obviously be infinitesimal. It is moreover questionable whether many of the breeding experiments hitherto undertaken have been conducted on the right lines. Good work is undoubtedly being done in some Provinces to develop improved strains of Indian cattle on Government farms, but the cross-breeding with European animals, which is still being carried on in certain places, appears to have little justification under existing circumstances. The military dairy farms, after many years of experimental work with various European and Indian breeds, have not yet succeeded in establishing a cross-bred strain which has proved itself capable of holding its own in India, although they have far more animals to work with than has any provincial breeding station. Even when cross-bred cattle do fairly well under favourable conditions, it has been observed that young stock which have European blood in them seldom if ever recover properly from any serious set-back they may have suffered owing to shortage of food, whereas similar animals of purely Indian origin, maintained under identical conditions, usually recover rapidly and show no subsequent ill-effects. Moreover, deplorable examples can be seen in many parts of the country of the degradation which may be produced by unscientific cross-breeding with European stock. And the difficulties resulting from the failure of experimental cross-breeding have been increased by the fact that, in the past, the direction of breeding policy on Government farms has often been abruptly varied in accordance with the individual ideas of successive Directors.

Since, therefore, the resources available are so limited, and genetical experiments with large slow-breeding animals such as cattle are so slow and expensive to conduct, it seems clear that

attention in India should in future be concentrated on the improvement of indigenous breeds, and that breeding policy should be controlled in each Province by a permanent and authoritative committee, composed essentially of specialists, and representative of all branches of the livestock industry.

Again, experience in other countries, such as South Africa and the U. S. A.,—where conditions for the large number of stock maintained used formerly to be not unlike those still prevailing in India,—has shown that when animals are exposed to a great variety of diseases and disease-producing factors, it is practically futile to attempt to grade them up without first ensuring proper control of disease by a sufficient number of scientifically trained experts,—such as India does not at present possess. If, however, such control can be established, the economic benefits obtainable are enormous. The Federal Bureau of Animal Industry in the U. S. A., for instance, under the direction of a veterinarian, Dr. J. R. Mohler, has co-ordinated the scientific exploitation of livestock so effectively throughout that country as to revolutionize the industry during the present generation. The change has been brought about mainly by organizing scientific research into every sort of problem connected with livestock, such as the correct methods for preventing and curing disease under local conditions, the implications of selective breeding, and the best means of ensuring that all kinds of animal products placed on the market are of even quality. In the Southern States, in which cattle constantly underwent degeneration, the results of the activities of the Bureau of Animal Industry were particularly striking; for it was discovered that the trouble was due almost entirely to the prevalence of ticks, and as soon as measures were successfully devised for eradicating them, it was possible to raise healthy stock without difficulty. Similarly, in South Africa, Sir Arnold Theiler has succeeded during the same period in controlling disease and disease-producing factors, particularly with regard to the incidence of various blood-parasites and forms of vegetable poisoning and mineral deficiency. As a result, instead of being a country notoriously unhealthy for cattle, South Africa has now become a very prosperous stock-raising country. At present Soviet Russia appears to be organizing the scientific development of her livestock industry on not dissimilar lines.

Although such work in animal husbandry as has hitherto been done in India has been on far too small a scale to have noticeably

beneficial effects on the livestock of the country as a whole,—or, indeed, even to arrest the gradual degeneration they are undergoing,—it has nevertheless been by no means unproductive of results. For example, it has been authoritatively estimated that during 1930-31 the gross cost of the provincial Veterinary Services was actually more than compensated for by the reduction in mortality effected by protective inoculation against disease. Moreover a good deal of evidence has been obtained to show on what lines more extensive veterinary work should be conducted in the event of its becoming, at some future date, financially practicable. It is a fact,—though seemingly a somewhat paradoxical one,—that the most degenerate cattle in India are found in those areas in which rainfall is heavy and fodder abundant, while in regions which are liable to drought and thus to periodical fodder famines the stock is usually comparatively healthy and of superior type. The reason for this appears to be that in the more rainless parts of the country lack of food has the effect of eliminating the more inefficient cattle; elsewhere large numbers of them survive, and in doing so impose a far greater financial burden on Indian agriculture than would be the monetary loss if they did not; while in the really humid areas, particularly the sub-montane tracts, where fodder is plentiful, the animals are exposed to so many debilitating diseases that very few of those reared prove satisfactory. Unfortunately, the liability to insidious parasitic and other disease is being increased with the extension of irrigation. It is thus clear that one of the first tasks before those who will, it is to be hoped, be responsible, at some future date, for directing more adequately financed veterinary activities in this country, will be to devise means for controlling the incidence of disease in regions which at present are unhealthy for cattle, but which contain an abundance of fodder.

Efforts were continued during the year to popularize silos and other means of conserving forage, but cultivators are slow to change their traditional practice in such matters, and progress is likely to be disappointing until they have grasped the fact that, owing to the steady diminution in the amount of natural grazing available, sufficient forage must now in most places be grown to maintain cattle in satisfactory condition throughout the year. Some promising results have recently been obtained on certain Government farms, particularly in the humid submontane areas, by adding to the fodders the minerals in which they are presumed to be

deficient. A great deal more investigation into the subject is however still required before scientific accuracy can be obtained in supplementing foodstuffs in this way. The project of establishing a Central Nutrition Research Institute, with subsidiary stations in other parts of India, has frequently been considered in the past, but has been frustrated by lack of funds. During the year under review, however, a grant from the Imperial Council of Agricultural Research was sanctioned for setting up a small animal nutrition station in one of the sub-Himalayan areas in which degeneration of stock, owing to defects in nutrition and parasitic disease, is particularly pronounced.

Considerable progress was made during the year in the treatment of surra,—one of the most widely distributed stock diseases in India,—and it is now clear that it can be successfully and cheaply controlled by appropriate drug treatment, provided that the necessary staff and facilities are available. Research designed to reduce the damage caused by infections such as rinderpest, hæmorrhagic septicæmia, and black-quarter has also proceeded satisfactorily. Actually, far smaller economic loss probably results from diseases of this type than from the more insidious and debilitating maladies brought about by the attacks of parasites or by nutritional deficiencies, owing to the prolonged and often permanent inefficiency the latter produce; but inadequacy of staff and funds has hitherto compelled the veterinary authorities in this country to concentrate on the relatively simpler problems of checking outbreaks of the more rapidly fatal epizootics. A proposal put forward during the year by the Animal Husbandry Expert, that the Imperial Council of Agricultural Research should provide funds for establishing small staffs for five years to investigate the incidence of stock-diseases in each major Province or State, has now been sanctioned, and it is hoped that these staffs, working in collaboration with the workers at the Muktesar Research Institute or of the veterinary colleges, will prove of considerable value. Good results were obtained during the year from the use of what is known as the serum-simultaneous method of inoculation against rinderpest, in place of the serum-alone method which was previously in general use throughout India, and it is established that the immunity conferred by the former lasts much longer. One of the difficulties which has hitherto militated against its adoption has been the length of time that must elapse before virulent blood despatched from Muktesar reaches the remoter parts of India, but

provincial veterinary colleges have now begun to undertake the production of virulent blood for use in their own neighbourhood.

During the year all that was possible under existing conditions was done to reorganize research at the Muktesar Institute in accordance with the recommendations made by the Royal Commission on Agriculture, and much of the work of serum-production was transferred to the Izatnagar sub-station, which is now budgeted for separately. The Muktesar Institute is the only fully equipped veterinary research institute of India. It is however recognized that the work undertaken there can never be altogether satisfactory until it is conducted on the same basis as in research institutes of standing in other countries,—that is to say with enough fully trained officers to enable the work to be organized in sections, each under an expert in his own branch. In 1930-31, owing to certain special circumstances, there was in fact only one experienced research officer available for continuous research at the Institute, and he was burdened with a great deal of diagnostic bacteriological work and with routine testing of all the biological products produced at Muktesar and Izatnagar. Under such conditions it is obvious that very little fundamental research could be done. Investigations of considerable importance and utility were however made into a number of problems. For example it was demonstrated by a series of strictly controlled experiments that under natural conditions rinderpest spreads but slowly among hill bulls, which are highly susceptible to it, and is not disseminated at all by simple contact after the tenth day following the injection of virus. This confirms the suspicion already held that fresh outbreaks of the disease can usually be traced to the movement of a susceptible animal from an infected herd during the incubative stage. Other observations showed that "plains" cattle from Bareilly and the neighbouring Districts possess marked immunity against rinderpest, and that very small doses of anti-serum suffice to protect them against a potent virus. Experiments were also continued as to the practicability of employing some form of vaccination,—as contrasted with the ordinary inoculations,—for the control of rinderpest in India, and for determining the utility of certain propriety drugs, such as plasmoquine and trypaflavine. An interesting experiment was made with regard to foot-and-mouth disease. It was proved by repeated injections of material obtained from infected bovines into guinea pigs that even after 425 days' storage in a refrigerator at a temperature of 0-5° C. the virus is

still effective. For the study of Johne's disease, a herd of infected cattle was established at Muktesar, and valuable information has already been obtained regarding the period of incubation and the course of this disease in Indian cattle, and the distribution of the causal organism in affected animals. Work was continued regarding bovine nasal granuloma and bovine enzootic hæmaturia, and facts were ascertained indicating that a serious outbreak of abortion that occurred amongst goats in this country was due to a *brucella* organism of the *melitensis* type. Further tests with material obtained from various countries showed that the virus of a disease which has caused heavy mortality among poultry in various parts of India, and has been variously named Newcastle disease, avian pest, and pseudo-fowl-pest, is immunologically identical with that of the so-called Ranikhet disease previously investigated at Muktesar. Intensive studies were also undertaken of canine piroplasmosis, due to *Piroplasma gibsoni*; of bovine parasitic gastritis, particularly the form due to *Mecistocirrus digitatus*; and of the effect of mineral feeding on diseases caused by phosphorus deficiency.

Valuable work was also done at the provincial veterinary colleges. At Madras, work was in progress in the bacteriological section of the college on the life history of certain parasitic trematodes; the relations of the trypanosomes pathogenic to horses, dogs, and cattle; the effectiveness of various drug treatments of cases of infection with piroplasmal organisms; the distribution of cattle ticks in the Presidency; and the prevalence of piroplasmosis in sheep and ectoparasites on sheep and goats. In the pathology section experiments were made on the transmission of sarcoma in dogs and epithelioma in cattle; and also on the possibility of preparing potent rinderpest serum under local conditions, especially in the hot weather. At the Lahore College, the heavy mortality which has occurred among stock in the Deg Valley was investigated; special measures were adopted for controlling an unusually severe outbreak of hæmorrhagic septicæmia; systematic observations were made on the prevalence of trypanosomes, piroplasms, and coccidia in the areas where the extension of the serum-simultaneous method of inoculation against rinderpest is now proposed; investigations were made concerning an obscure disease of calves which occurs annually in certain farms in the Punjab, and the incidence of Ranikhet fowl disease; and proof was obtained that the heavy mortality which had been occurring among horses and

cattle in certain Districts has been due to anthrax in an atypical form.

Another extremely important subject which requires our attention in this Chapter is Forestry. The existence of large tracts of growing timber is of immense practical advantage to every country which is so fortunate as to possess them,—but especially of course to those whose economic activities are mainly agricultural,—and an intelligent policy for tending them is the more important since many of the benefits which result from it are indirect, and spread over so large a period of years as to appear at first sight insignificant in comparison with the obvious gains to be derived from their despoilment or destruction; in a country like India, where such an overwhelming proportion of the population is entirely dependent upon the land for livelihood, the importance of proper administration of forest areas would be difficult to over-estimate.

The value of the country's forests, in so far as the immediate needs of India's immense peasant class are concerned, lies in the fact that they provide grazing and fodder for cattle, edible fruits and roots which are a real asset in times of famine, small timber for houses and wood for implements, and logs and sticks for household fuel as a substitute for cow-dung,—whose combustion for that purpose is, as we have seen, one of the most lamentably wasteful features of the traditional life of rural India, since it causes a perpetual and increasing impoverishment of the land by destroying the manurial values which ought normally, and according to all accepted scientific theory, to be returned to it. But there is a limit beyond which these direct and obvious benefits cannot be obtained by the rural population without the sacrifice of certain ultimate advantages which are even more important; a balance must in fact be struck whereby forests are preserved as well as exploited, and the extent of new planting and of maintenance must be at least proportionate to the depredations, if grave losses are not to be incurred. Neglect of her forests in the past has caused India serious and permanent disadvantage. The historic forests of the Gangetic plain have been sadly depleted, and although in some places their disappearance has made room for cultivation, in others the once wooded slopes and plains are now barren and desolate. As the traveller goes about other parts of the country he will observe many examples of the deplorable consequences which ensue from the reckless or ignorant destruction of forest trees and the lesser

growths of brushwood and scrub; ravines and barren lands will be noticed from which falling scree or sand is steadily encroaching on areas of good silt, and in new sterile hills faint traces will be seen of irrigation channels along which was conveyed water from streams and springs long since dried up, and which must have enabled a vanished population to reap ample harvests from ground which at present yields nothing better than cactus or dwarf palm. Fortunately, the forests that drape the high hills in which India's magnificent rivers rise are too vast and inaccessible to have suffered much from human inroads; but had it been possible to despoil them, it is certain that many of the great irrigation schemes which we shall shortly describe, and which depend for their existence on a regular and sufficient supply of river water, could not have materialized, and the immense benefits which they are conferring on the country would have been lost. The process of deforestation throughout the country as a whole must however have been in progress for many centuries before steps were taken to prevent it; and its serious effects began to be unmistakably revealed when the population started increasing substantially under the stabilized conditions of British rule. The new demands for fuel, the extension of tillage, the increase of herds, and the need for constructional timber combined to cause a fierce onslaught upon the forest areas. But happily the danger was perceived before much irreparable damage was done, and India consequently has the credit of having been the first part of the Empire in which the preservation of forests was seriously undertaken.

It is possible to classify the ultimate advantages which result from the proper preservation and administration of the country's wooded areas under two heads. The first, at which we have already hinted, arises from the insufficiently understood but extremely important influence which forests have upon the character of the climate, the extent and distribution of rainfall, and the depth and quality of the soil. The mere existence of large tracts of growing timber is in itself sufficient to stimulate a greater amount of precipitation than would otherwise occur, since trees in the ordinary processes of their metabolism transpire large quantities of water vapour into air, and should the atmospheric moisture be already near the point of condensation, rainfall will probably be induced. Thus in those parts of the world in which the humidity of the air-currents is not very pronounced, the occurrence of rainfall,—

which, needless to say, is the fundamental factor upon which all agricultural operations are based,—is intimately dependent upon the existence, especially in the hills, of an adequate amount of woodland; and there seems good reason to believe that within quite recent times the productivity of the soil and the density of population over large portions of the earth's surface, such as Greece and Tunisia and other regions bordering on the Mediterranean basin, for example, have been radically altered by the destruction of forests and the desiccation which has consequently ensued. Moreover, besides stimulating precipitation, forests preserve the moisture for good purposes after it has actually fallen, by absorbing it and doling it out gradually, instead of letting it run away to waste; and this in turn tends to prevent the occurrence of serious floods and the formation of gorges and ravines. And not only do they bind the valuable surface soil together with their roots and therefore save it from being gradually washed into the rivers, but by the formation of rich vegetable moulds they directly increase its productivity.

The second advantage which results from the possession of well-tended forests is of course the revenue obtainable from the sale of the more important forest products. In India the great variations of climate result in the existence throughout the country of widely different types of woodland,—such as the characteristic teak-growing areas of Burma and Southern India, the famous conifer forests of the lower Himalayas, and the dense ever-green vegetation of the humid districts to the East and around the coasts. But hitherto it has only been possible to exploit a very small proportion of the country's vast forest areas for the extraction of timber, owing to the difficulty of undertaking transport from the remote and difficult regions in which most of them are situated,—and also to the fact that natural seasoning cannot be profitably resorted to in a sub-tropical climate. In consequence there is an enormous wastage of good timber for which no commercial use can at present be found. Numerous endeavours have been made in recent years to reduce this loss, as for example by the erection, both by Government, and by private timber merchants of kiln-seasoning, plants logging machinery, saw mills and so forth in various parts of the country; but the forest areas are so vast that activities of this kind cannot do more than touch the fringe of the problem, and the remoteness of the majority of the reserves from all practical means

of transport must continue to prevent their full economic exploitation for an indefinite period. The best known and most profitable of the timbers grown in the forests are teak, deodar and sal, which are used for constructional work; toon, padauk, and pyinkado; decorative woods such as rosewood and ebony; and sandalwood, which is exceptionally valuable owing to the high prices obtained for its oil. In addition, the use of the lesser-known Indian hardwoods has been considerably extended in recent years, the Railway and Ordnance Departments having rendered valuable assistance in developing the demand for timbers such as haldu, laurel, koko, gurjan, eng, and sissoo; while yon, dhaman, white chuglam, badam, and various other types are being increasingly used for other purposes. The extent to which the indigenous demand for hardwoods other than teak is growing is indicated by the fact that the quantity used by the railways amounted to 12,000 tons in 1930 as against 9,800 in 1929.

Apart from the trade in timber, a very considerable revenue is derived from the sale of subsidiary forest products. Perhaps the most interesting of these, owing to its great potential importance, is bamboo, which besides the variety of obvious uses to which it is put, is now,—as a result of some remarkable research work achieved at the Forestry Institute at Dehra Dun,—being manufactured into paper pulp of satisfactory quality. In view of the immense areas over which bamboo is grown, the importance of this discovery needs no emphasis, and there is already reason to look forward with confidence to a time when a large proportion of the paper now imported,—its annual value amounts to between Rs. 2 and 3 crores,—will be manufactured in India. Investigations at Dehra Dun during 1930-31 demonstrated that it should be possible to manufacture even badly mildewed bamboo into clean white paper on ordinary commercial lines. Amongst the other minor forest products are lac, tanning materials, essential oils, turpentine, and rosin,—all of which have now established themselves firmly in the markets of the world. Private concerns in India are interesting themselves more and more in the commercial possibilities of the country's forests, and are developing the extraction of timber, the manufacture of matches and ply-wood and the production of paper-pulp. Generally speaking, so far as minor industries are concerned, the Government limits itself to the maintenance of model institutions through which instruction is

imparted in the latest methods of work. Of the value of the trade in lac we shall see something in Chapter V. As regards rosin and turpentine, there has been a steady increase in indigenous production during recent years, with the result that, except for small quantities purchased mostly from America for special purposes, imports of both these commodities have for some time practically ceased; but as the demand for rosin is greater than that for turpentine, and as, in manufacturing rosin, turpentine in excess of what can be consumed in India is produced, an external market for the latter commodity has to be found, and this, recently, has proved difficult. Between about 1916 and 1922, world-prices for turpentine were exceptionally high, and the production and use of substitutes was thus greatly stimulated; these, at first, were of poor quality, but remarkable improvements were soon affected, and in addition, many of them are obtainable as by-products of other manufactures and can consequently be sold extremely cheap. Moreover, during recent years, there has been serious over-production of turpentine itself in America, which has led to a general slump in prices. It is therefore not easy at present to market Indian turpentine at a profit, and tapping for rosin in some parts of the country,—as for instance in the Kumaun pine forests,—has had to be slowed down. At the moment of writing, however, it seems possible that prices may improve somewhat during the current year, owing to the curtailment of production in America. In May 1931 the price had risen to about 55 cents per American gallon, as against 49 cents or less in 1928.

The surplus earned by the Forest Department was of course for a considerable period relatively small, although it is noteworthy that as far back as 1867 it amounted to Rs. 17 lakhs; and in recent years it has been really substantial,—a fact which is the more satisfactory when we recall the peculiar geographical and climatic conditions under which Forestry is conducted in India, and that in the United States and Canada, where such difficulties are less, the forests remain unremunerative. The net profit derived from the country's forests for the year 1929-30 amounted to no less than Rs. 2·51 crores, as against Rs. 2·27 crores in 1928-29; and it would certainly have been very much larger than this had ampler funds been available for development in the past. It is true that large tracts of forests are of such poor quality that they can never yield much profit; but at the same time there is no essential reason why

the average net annual yield of the forests as a whole should not be substantially more than the present figure of 2 annas per acre. Some of the more fortunately situated forests have given a return of as much as Rs. 15 per acre per annum under intensive management; and were it possible to increase the average annual yield of the forests as a whole to a figure very much less than this, the net return to the State, even were there no increase in acreage, would obviously amount to an enormous sum. In New Zealand some years ago the interesting experiment was made of raising by means of loan the funds which were not available from revenue for forest development; and there seems little doubt that were such a policy practicable in India the investment would in the end prove immensely remunerative. At present no more than about a third of the vast area under the control of the Forest Department is dedicated to the production of saleable timber, and scientific experts are agreed that by increasing the acreage administered with a view to a profit, by improving the quality of the stock and its resistance to disease, adopting better methods of extracting and marketing, and giving greater attention to minor products, it would be quite practicable, were the money available, to make the forests of India one of the most substantial sources of her revenue. Under present circumstances we are confronted with the paradox that despite her enormous resources she is, in the balance, an importer of timber,—although it is unquestionable that under a more intensive system of exploitation, and by the discovery of new uses for timber at present unmarketable, she could easily produce ample for her own needs and leave a handsome surplus for export. But even as things are, and without the expenditure of large sums of money, it is possible to look forward to the immediate commercial future of the Indian forests with confidence. As we have seen, there has already been a very satisfactory increase in the sale for the lesser-known Indian timbers, and in view of their intrinsic merits there is every reason to hope that this will continue. The discoveries at Dehra Dun of the possibility of manufacturing paper from bamboos have already begun to yield financial results, and much valuable work is being done there in a multitude of other ways, such as the conversion of wood pitches into road tars, the adaptation of low-grade turpentine to commercial uses, the study of indigenous crude drugs, the testing of portable metal charcoal kilns for producing charcoal in hitherto inaccessible and unworked forest areas, and experiments

in the suitability of various Indian timbers for the manufacture of fibres and matches, and of high-quality wood-work such as panelling, furniture, bobbins, gun-carriage poles and rifle-stocks, which hitherto have had to be imported. Moreover from the geographical point of view India is excellently situated for increasing her shipments of timber overseas. The immense and valuable forests along the Western Ghats, down the Burmese coast, and in the Andaman Islands are conveniently near the sea, and there is every reason to suppose that in time, and by careful organisation, it should be possible to increase their output very substantially and find profitable markets for it in many parts of the world which at present obtain their timber from other sources.

It was in 1865, as a direct result of the passage of the Indian Forest Acts, that the nucleus of the existing Indian Forest Service came into being. In earlier years its task was beset with great difficulties, since it was compelled to discharge the novel duty of protecting the heritage of nature from the thoughtlessness of man. At present the size of the territory under the control of the Department is more than twice that of the British Isles, and amounts to 250,000 square miles, or about one-fifth of the total area of British India; and although two generations or more have now elapsed since the Forest Acts came into force, it will be readily understood that the administration of so vast a tract of land, and its protection against despoilment, has not made the Department popular. The dependence of the Indian peasantry upon the forests in their immediate vicinity for numerous small benefits, naturally tends to prevent the broad national aspects of forest conservation from being properly understood, and restrictions upon the grazing of cattle, the felling of trees, and the lighting of fires, are frequently resented. The friction which sometimes in consequence arises between the Department and certain sections of the public tends to produce the most lamentable results, as for instance during the non-co-operation campaign of 1920-22, and during the Civil Disobedience Movement in 1930-31, when incendiary fires laid in forests in various parts of the country obliterated within a few days the fruits of decades of careful conservation. The Government has however given ample proof that it realizes the necessity of arousing popular interest in the ultimate importance of the Department's work, and special steps are being taken to relax the rigour of forest restrictions in so far as this can be done without prejudice to the interests

of the future. Many of the smaller reserves, which are chiefly valuable for the grazing which they supply to local cattle, have been handed over to village *panchayats* for management. In Madras, for example, the responsibility for tracts of forest covering some thousands of square miles has now been transferred; a special officer attached to the provincial Board of Revenue scrutinizes the work of the village committees, and decides how many cattle shall be allowed to graze in any particular area, and what the rent of that area shall be, but all detailed administration is left to the *panchayats* themselves. It is to be hoped that with the education of public opinion on the subject of forests, the delegation of authority which has been embarked upon will not be misused, for nothing could be more disastrous to the future of the country than the sacrifice of her forests to the immediate interests of a few generations. Even now, despite statements to the contrary, the amount of grazing permitted in Government forests impinges on the margin of safety. Excluding Burma and the Federated Shan States, no fewer than 9 million animals are allowed forest grazing at nominal fees varying from 2 annas to 2 rupees per annum, and an additional 5 million get their grazing without charge at all. All unclassed forests, or those areas which have not been reserved or protected and are for the most part situated in accessible or undeveloped regions,—whose total area amounts to about 135,000 square miles,—are open to grazing, and on 84,000 of 113,000 square miles of reserved and protected forest, grazing is also allowed. More than a quarter of the cattle of the Central Provinces and Berar graze in Government forests, and the percentage of the cattle of Bombay and the Punjab which have access to such grazing is also very considerable. The total annual value of the rights and concessions enjoyed by villagers every year from the administered forests is estimated to amount to no less than Rs. 66 lakhs. The opponents of the forest Department commonly assume that an almost limitless extension of grazing in Government forests is possible; but so far from bearing this out, the figures already quoted indicate that such grazing rights as are already allowed, unless carefully controlled and scientifically regulated, would be capable of inflicting severe damage on the forest resources of the country.

The Department for many years after its establishment was naturally too engrossed in the practical details of administration to take much interest in research, and it was not until 1906 that the

Forest Research Institute at Dehra Dun was founded. Since then, however,—as we have already indicated,—the expansion in the scope and importance of this aspect of the Department's work has been very great, and during the year under review, in addition to the achievements we have described, valuable work was done in a variety of other ways. In the Economist's Branch tests of damaged aeroplane parts and material for repairs to aeroplanes were undertaken, and arrangements were made for testing all the types of wood used in aeroplanes; a successful means of improving the design of sleeper seasoning kilns at the East Indian Railway workshops was discovered; and several useful tests were made into the methods of preserving railway sleepers, as a result of which there is a possibility of increasing the number of timbers used for this purpose. In the Forest Botanist's Branch nearly 600 specimens of plants sent from Burma were identified. Substantial progress was also made in the Dehra Dun and Saharanpur divisions in the investigation of the *shisham* root disease and also of a newly discovered disease of sal. In the Silvicultural Branch much work was done on the compilation of statistics such as volume tables. Investigations were carried out to decide the best methods of sowing, planting and thinning certain trees; and various ecological problems were studied in some detail. The Entomologist's Branch undertook research into the "spike" disease of sandalwood in Madras, which is still in progress; examination was also made of insects which attack teak, particularly to defoliators. The Biochemist prepared a composition for reconditioning abrased spikeholes in railway sleepers during the year, and carried out experiments upon several plants from which products of economic value can be obtained.

In 1891, an International Union of Forest Research Organizations was created, as a means for facilitating the interchange of scientific ideas between different institutions concerned with forestry. After its meeting in 1910, the Union appears to have become defunct, but as a result of decisions reached at the International Congress of Forestry Experimental Stations held in Stockholm in July, 1929, it has now been decided, as was indicated in our previous Report, to revive it. The work of the Union will consist primarily in endeavouring to introduce uniform nomenclature and standardize methods in forest research work, and to provide for the establishment of an international forestry

bibliography; and periodical Congresses will of course be held. During the year under review arrangements were being made, through the Secretary of State for India, to secure the admission of the Dehra Dun Forest Research Institute to the Union.

At the British Empire Forestry Conference held in Australia in 1928, a recommendation was made that the Imperial Forestry Institute at Oxford should be established on a permanent footing and that a special Information Branch,—or "Imperial Forestry Bureau",—should be attached to it. The total cost of the proposals, as worked out by the Forestry Commission in consultation with the authorities of the Institute, was estimated to be £19,000 *per annum,* and it was suggested that the Dominions, India, and the Colonies should make contributions towards the maintenance of this Institute for the five years 1932-37. The Secretary of State recommended for the consideration of the Government of India that this country's annual contribution should be fixed at £3,000, and as the activities of the Institute are calculated to benefit both the Central and provincial Governments, it was tentatively proposed that the latter should between them contribute £2,400 a year, the remaining £600 being put up by the Government of India. The provincial Governments however have only agreed to provide an aggregate annual sum of £1,850, and in the circumstances, and in view of the prevailing financial stringency, the Government of India has decided that the question of its own contribution should be deferred until the budget for 1932-33 comes up for consideration. This conclusion was reinforced by two further considerations: firstly, that the arrangements for financing the Institute will not in any case come into force until 1932; and secondly that, before that time there will be a better possibility of envisaging the prospective functions of the Central and provincial Governments in matters connected with Forestry. By 1932, it may also be known whether owing to the inability of the Dominions to contribute the total sum of £7,500, as suggested for allocation in the first instance, the original scheme of equipping and improving the Institute will have to be subjected to review, which, should it occur, would in all probability necessitate an alteration in the total amount to be contributed by India.

Until August 1930, Sir Alexander Rodger, Kt., O.B.E., held the post of Inspector General of Forests, and President of the Forest Research Institute and College at Dehra Dun,—when he

proceeded on leave preparatory to retirement. Mr. A. D. Blascheck, I.F.S., Chief Conservator of Forests in the Punjab, was selected to succeed Sir Alexander Rodger, but as he could not join till October, the charge of the current duties of the post was held during this interval by Mr. A. E. Osmaston, I.F.S., Principal and Professor of Forestry at the Forest College, Dehra Dun, in addition to his own.

The next subject for us to consider is Irrigation, which is one of the most important factors in Indian agriculture, especially in those parts of the country in which the annual rainfall averages less than 50 inches. As we have seen at the beginning of this Chapter, when discussing the geographical aspects of the Census, almost the whole of India is subject to the monsoons, which means that the flow of dry air from the bald stony *plateaux* of Tibet and Inner China in the North East,—which sets in during the autumn,—is checked and repelled about midsummer by a moist South-Westerly current drawn from off the vast expanse of ocean which lies in the direction of Africa. As a result, the average annual rainfall throughout the country as a whole, namely 45 inches,—is remarkably constant, the greatest deviation from the normal ever recorded having been no more than 7 inches. But despite this general constancy, the amount of rain discharged by the South-West monsoon is not only subject, at least in non-peninsular India, to a progressive and general variation as between West and East,—which ranges from a minimum of *nil* in certain localities at one end of the Indo-Gangetic plain, between Rajputana and Baluchistan to an annual maximum of 500 inches at some places in Assam,—but also to very wide and unaccountable local variations, which not infrequently amount to deficiency or excess extending beyond 50 per cent. of the normal. It is of course these local fluctuations, even more than the general variation from West to East, that constitute the essence of the problem with which irrigation is designed to deal, since they are the chief cause of the famines which have been the bane of Indian agriculture since the dawn of history. Moreover it is unfortunately a fact that the lower the average annual rainfall is, the greater is its liability to serious deviation from the normal, and thus throughout almost the whole of the North-West Frontier Province, Sind, the Punjab, the United Provinces,—except for the sub-montane regions,—a large portion of Bihar, most of the Madras and Bombay Presidencies exclusive

of the coastal tracts, and portions of the Central Provinces and Burma,—in all of which the average precipitation is less than 50 inches annually,—security against periodical famine or scarcity resulting from drought can only be obtained by some artificial means of securing a regular supply of water; and in some of the driest tracts, such as Sind and parts of the Punjab, the production of crops without irrigation would not be possible at all.

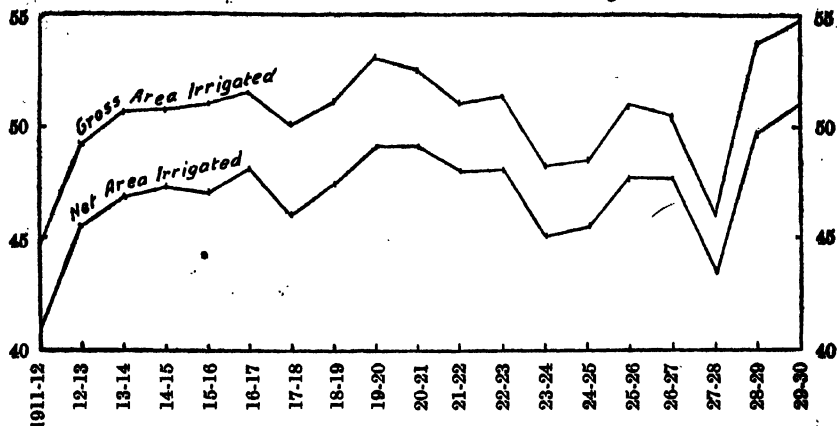
From very early times, therefore, systems of irrigation such as canals, storage reservoirs, wells, and dams across the beds of streams have been familiar features of the Indian landscape. Indeed,—except perhaps for Egypt and Mesopotamia,—irrigation in certain parts of this country has been regularly resorted to as an aid to agricultural operations for a longer period of history than anywhere else in the world. Until about 80 years ago, however, relatively little attempt had been made either to improve the methods employed or to apply them beyond certain limited areas where the practice of watering the land by artificial means had become traditional; but since that date,—particularly during the last 40 years,—the progress made has been rapid and impressive, and may justly be claimed as one of the most admirable of all the achievements of the British *Raj*. In 1878-79 the total acreage of land irrigated by Government works in India was about 10,500,000,—already a large figure when compared with that of other countries; by 1900-1901 it had been raised to about 19,250,000, and by 1919-20 to 28,000,000. In 1929-30,—the latest year for which detailed statistics are available,—the area irrigated by Government works in British India alone,—that is to say, exclusive of the Indian States,—was 31,700,000 acres; and by the time the various works at present in course of construction are in full working order it is estimated that the total will be increased to 40,000,000 acres. Ultimately, allowing for the natural expansion of existing schemes, it seems likely that the acreage irrigated by Government works will not be less than 50,000,000. Even on the basis of the existing figures India contains a far larger irrigated area than any other country in the world. The total for the United States, for example, according to recent information, was little more than 20,000,000 acres; for Japan, 7,000,000; for Egypt, 6,000,000; for Mexico, 5,700,000; for Italy, 4,500,000; for Spain, 3,500,000; and for France, Chile, and Java about 3,000,000.

AREA IRRIGATED IN BRITISH INDIA

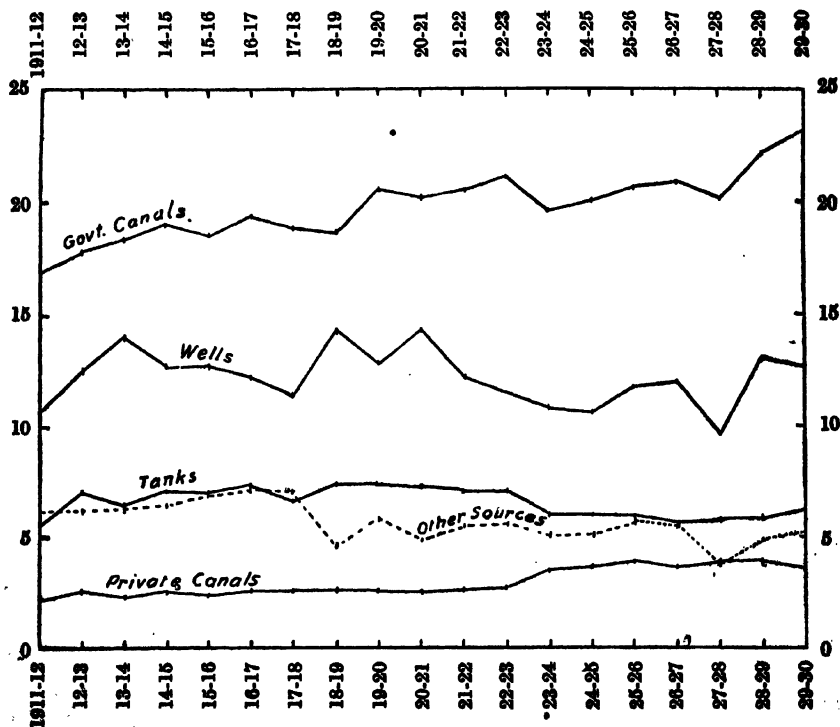
Area in Millions of Acres

(*i*) Total Gross Area and Total Net Area irrigated.

Area in Millions of Acres



(*ii*) Net Area irrigated by various sources.



In the Gross Area irrigated, areas sown twice under irrigation are counted twice.

The figures for the year 1929-30 are provisional.

The present policy with regard to the development of irrigation in India was laid down by the Irrigation Commission appointed by Lord Curzon in 1901; but it was not until 1908 that irrigation statistics began to be systematically recorded. During the year 1929-30 the total acreage irrigated by Government works in British India alone was 1,000,000 in excess of the previous record figure of 30,700,000 acres attained in 1928-29, and represented 12·7 per cent. of the cropped area. The length of the main and branch canals and distributaries in use amounted to about 75,000 miles, and the estimated value of the crops supplied with water from Government works was Rs. 128 crores. During the five years between 1925-26 and 1929-30 the average annual value of the crops raised with the assistance of Government irrigation works was about Rs. 137 crores, which is 10 per cent. more than the total capital expenditure incurred upon the works concerned. The Province containing the largest irrigated area in 1929-30,—as in previous years,—was the Punjab, where the total acreage amounted to 11,700,000; moreover a further 1,400,000 acres were irrigated from channels which, although drawing their supplies from British canals, lie wholly in the Indian States. Next among the Provinces of British India came the Madras Presidency, with an area of 7,400,000 acres irrigated, followed by the United Provinces with 4,500,000 acres, and Sind with 3,800,000 acres. The total capital outlay on irrigation and navigation works, including works under construction, amounted at the end of the year 1929-30 to Rs. 130 crores. The gross revenue was Rs. 12·9 crores, and the working expenses Rs. 5·9 crores, the net return on capital therefore being 5·4 per cent.

Of the various systems of irrigation in use in India,—such as canals, tanks, wells, lift-irrigation from rivers, and temporary dams for holding up flood-water, canals are by far the most important,—although the utility of the tanks with whose construction the Government has been connected is, owing to their vast numbers, far from negligible; in the Madras Presidency alone there are over 35,000 petty irrigation works serving between 2,500,000 and 3,000,000 acres of land. The irrigation-canals of India are of two distinct types, namely those that are fed by perennial rivers and those that derive their water from artificial reservoirs. Generally speaking canals of the first type are found in the regions traversed by the rivers that rise in the Himalayas, whose snows yield an

inexhaustible supply of water during the dry months of the year, while the latter are situated in peninsular India, where no such natural storage is available. The most important storage works are those in the Madras Presidency, the Deccan, the Central Provinces, and in Bundelkhand, which range in size from small earthen embankments to enormous dams such as that under construction on the river Cauvery at Mettur, in the Madras Presidency, which will be capable of impounding over 90,000 million cubic feet of water. Canals which draw their supplies from perennial rivers may be either perennial or inundation canals. The former are provided with head-works enabling water to be drawn from the river irrespective of its natural level; within this class fall the great perennial systems of the Punjab and the United Provinces. Inundation canals have no such means of control, and water only finds its way into them when the natural level of the river reaches the necessary height. The most important inundation canals in India are those in Sind, and indeed upon them the whole irrigation of this region at present depends. There are also several canals of this type in the Punjab.

We may now describe some of the more important irrigation works at present under construction. The Lloyd Barrage and Canals Construction Scheme, whose head-works are on the river Indus at Sukkur, in Sind, is the largest single irrigation project ever undertaken in India. Its purpose is to provide a perennial supply of water to an area of about 1,850,000 acres which is at present inadequately served by inundation canals, and to irrigate a further 3,325,000 acres. The main feature of the scheme is a barrage about a mile long with a bridge-way across the Indus near Sukkur, which it is hoped will be completed early in 1932,* when irrigation will commence by means of seven large canals taking off above the barrage,—three on the right bank and four on the left,—each of which has a separate head regulator. The latest estimate of the cost of the work is Rs. 20·03 crores, of which Rs. 15·15 crores have now been spent. The scheme was actually sanctioned in 1923, and the period under review was the sixth year during which construction has been in full progress. Of the barrage itself, the under-water work of the last 27 spans was completed during the year, and the whole of the superstructure has also been finished except the parapets and four bridge arches.

* It was formally opened by H. E. the Viceroy on 13th January, 1932.

Satisfactory progress has also been made with the designing and excavation of channels and water-courses, and with the construction of the many masonry structures such as regulators, falls, bridges and syphons. The total quantity of earth-work done at present on the main canals and branches,—that is to say exclusive of work on water-courses and drainage,—amounts to about 487 crores of cubic feet, and the approximate amount remaining to be done is 82 crores according to the estimates so far prepared. The total length of the main canals, branches, and distributaries to be constructed is 6,116 miles, of which 4,500 miles, mostly of the larger sections, have now been excavated. In October 1930, special scientific investigations were undertaken in connection with the scheme, with the object of ascertaining how far the opening of the new canals would lead to water-logging; and examination of the sub-soil is being carried out over an area of 2,400 square miles on the right bank and 3,500 square miles on the left. Surveying operations have also been in progress, and the Survey of India has completed the rectangulation of the area under the command of the canals into 320-acre rectangles; further sub-divisions into 4-acre rectangles is now being undertaken under the supervision of the Revenue Officer.

The next great irrigation work in progress is the construction of the Sutlej Valley Project in the Punjab, which was sanctioned by the Secretary of State in 1921. On both banks of the river Sutlej, that is to say in the British territory to the North and in that of Bahawalpur State to the South, there were in existence for some time a series of inundation canals which drew their supplies from the river whenever the water was high enough to permit it. These canals were subject to all the drawbacks of irrigation by inundation; there were no weirs at their heads and, in many cases, no means of controlling the volume of water entering them, with the result that, while a supply of water was assured during the rainy months of a normal year, it was liable to wide fluctuations. At times of heavy rainfall the canals frequently suffered serious damage from floods, whereas when rainfall was deficient they might be practically waterless for months on end. It was to remedy this state of affairs that the construction of the Sutlej Valley Project was undertaken. When it is completed, the canals will be assured of an ample and well controlled supply of water from April to October, and will, moreover, be capable of extension over the whole

inexhaustible supply of water during the dry months of the year, while the latter are situated in peninsular India, where no such natural storage is available. The most important storage works are those in the Madras Presidency, the Deccan, the Central Provinces, and in Bundelkhand, which range in size from small earthen embankments to enormous dams such as that under construction on the river Cauvery at Mettur, in the Madras Presidency, which will be capable of impounding over 90,000 million cubic feet of water. Canals which draw their supplies from perennial rivers may be either perennial or inundation canals. The former are provided with head-works enabling water to be drawn from the river irrespective of its natural level; within this class fall the great perennial systems of the Punjab and the United Provinces. Inundation canals have no such means of control, and water only finds its way into them when the natural level of the river reaches the necessary height. The most important inundation canals in India are those in Sind, and indeed upon them the whole irrigation of this region at present depends. There are also several canals of this type in the Punjab.

We may now describe some of the more important irrigation works at present under construction. The Lloyd Barrage and Canals Construction Scheme, whose head-works are on the river Indus at Sukkur, in Sind, is the largest single irrigation project ever undertaken in India. Its purpose is to provide a perennial supply of water to an area of about 1,850,000 acres which is at present inadequately served by inundation canals, and to irrigate a further 3,325,000 acres. The main feature of the scheme is a barrage about a mile long with a bridge-way across the Indus near Sukkur, which it is hoped will be completed early in 1932,* when irrigation will commence by means of seven large canals taking off above the barrage,—three on the right bank and four on the left,—each of which has a separate head regulator. The latest estimate of the cost of the work is Rs. 20·03 crores, of which Rs. 15·15 crores have now been spent. The scheme was actually sanctioned in 1923, and the period under review was the sixth year during which construction has been in full progress. Of the barrage itself, the under-water work of the last 27 spans was completed during the year, and the whole of the superstructure has also been finished except the parapets and four bridge arches.

* It was formally opened by H. E. the Viceroy on 13th January, 1932.

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of the low-lying area in the river valley. Perennial irrigation will in addition be provided for the uplands on both banks of the river, which at present are entirely unirrigated, and consequently barren, owing to the low rainfall of the locality. The scheme provides for the construction of four weirs, three on the Sutlej, and one on the combined Sutlej and Chenab, with ten main canals taking off from above them. The multiplicity of canals and weirs seems a peculiar feature of the scheme, until it is realised that the project consists of four inter-connected systems, each of the first magnitude. The canals are designed to utilize 48,500 cusecs of water during the hot weather and the monsoon, and 7,000 cusecs of water during the cold weather. Over 5,000,000 acres will be irrigated, of which 2,000,000 will be in the Punjab, 2,900,000 in Bahawalpur and 340,000 in Bikaner. The immense importance of the project will be realised from the fact that it is estimated that it will bring 3,750,000 acres of desert waste under cultivation. From the outset of the operations, extensive use has been made of the latest constructional machinery, and progress has thus been greatly accelerated. Of the ten main canals for which the scheme provides, four,—namely the Pakpattan, Dipalpur, Eastern, and Mailsi canals,—are mainly in British India, and the remainder,—known as the Bikaner, Fordwah, Eastern Sadiqia, Bahawal and Qaimpur, Abbasia, and Panjnad canals,—are mainly in the Indian States. All of them except the last two had been in use for over three years at the end of the period under review. The Bikaner, Fordwah, Qaimpur, and certain channels of the Eastern Sadiqia and Bahawal canals have now been transferred to the States concerned,—namely Bikaner and Bahawalpur,—in accordance with the agreement originally made. Of the four weirs, three are now completed. One of these, however,—the Islam weir,—sustained considerable damage as a result of the exceptional flood of 1929, which destroyed a fairly large portion of the weir itself together with its piers and superstructure; but by June 1930, the work of reconstruction had been finished, the final form of the weir having been modified in the light of the experience gained from this particularly serious flood. The fourth weir,—known as the Panjnad weir,—and its subsidiary works are still in course of construction. It was thought desirable to make considerable alterations in the original plan for this weir in view of what had happened to the Islam weir, and the downstream floor and its

protection are being strengthened and the 33 bays reinforced by the addition of 14 others. This weir, it is anticipated, will be opened in 1932. The sanctioned estimate of the cost of the whole project was Rs. 23·86 crores, and the expenditure incurred up to the end of the year 1929-30 was Rs. 19·37 crores, of which the States of Bahawalpur and Bikaner had together contributed Rs. 10·21 crores.

Another big irrigation work, to which we have already referred, is the construction of the Cauvery Reservoir in the Madras Presidency, at an estimated cost of Rs. 7·37 crores. The object of this work is firstly to improve the fluctuating water-supply of the existing system of irrigation extending over more than a million acres of the Cauvery Delta, and secondly to extend irrigation to a new area of 301,000 acres, from which, it is estimated, as much as 150,000 tons of rice will be obtained annually. The essence of the scheme is the construction of a large dam at Mettur, on the Cauvery, to store over 90,000 million cubic feet of water, and of a canal nearly 88 miles long with a connected distributary system. The expenditure incurred on the scheme up to the end of 1930 amounted to about Rs. 4 crores.

Of the various other important irrigation works which have recently been completed in various parts of the country, detailed accounts have been given in our previous Reports. For example, in 1928 the Sarda irrigation works in the United Provinces were formally put into service. The river Sarda,—or Chauka, as it is called further down its course,—rises in the Himalayas North of Lucknow and flows in a South-Easterly direction, and after joining the river Gogra makes confluence with the Ganges near Chapra. The irrigation works supplied from its waters were originally authorized in two portions, the Sarda Kichha Feeder Project, comprising the head-works and the main canal and Western branches, which was sanctioned in 1919, and the Sarda (Oudh) Canal, comprising the Southern branches, which was sanctioned in 1921. The system as a whole contains some 650 miles of main canal and branches, 3,600 miles of distributaries, and 110 miles of escapes, and will irrigate over 1,333,000 acres, yielding a return of about 7 per cent. on the estimated capital cost of a little over Rs. 9·5 crores.

Two important irrigation works which have recently been completed in the Deccan have also been mentioned in earlier Reports, namely the Bhandardara Dam, which is the highest in India,

and the Lloyd Dam at Bhatgar, which is the largest mass of masonry in the world. Irrigation from the great lakes formed by these dams is rapidly being developed in the valleys below them, the Bhandardara Dam supplying the Pravara Canals and the Lloyd Dam the Nira Canals. Irrigation in the Pravara area has grown very rapidly, and lands on these canals which formerly were unproductive, are now covered with valuable sugarcane crops. The Nira Valley Canals, consisting of the new Nira right bank canal and the extension of the Nira left bank canal, will command a total culturable area of about 675,000 acres, and constitute the largest irrigation system in the Deccan. The completion of the great storage works at Bhandardara and at Bhatgar has of course greatly extended the total irrigable area and when fully developed they will be capable of providing for over 450,000 acres annually.

Having described the part which Agriculture and the various activities associated with it plays in the life of the country, we may now turn our attention to industry. From the figures on page 154, it will be obvious that, as compared with agriculture, the proportion of the population that is engaged in industry must be extremely small. According to the Census of 1921* the percentage of the inhabitants that was then supported by industry was 10½ per cent.,—a further 1½ per cent. being engaged in transport work or mining. But of the 10½ per cent. classed as industrial workers, the great majority were engaged in unorganized industries connected with the supply to personal and household necessities and the simple implements of work, and no more than 1 per cent. of the population was shown as being occupied in organized industry. Nevertheless, when the total population of a country amounts to the enormous figure of 320 millions, even a small percentage of it represents a substantial number of people †; and in point of fact the existence in India of approximately 20,000,000 persons who it has been calculated might legitimately be described as industrial workers has entitled her,—as a result of the memorandum issued from the India Office to the Secretary-General of the League of Nations in 1921,—to be listed by the International Labour Orga-

* Unfortunately at the time of writing figures regarding the industrial population from the 1931 Census returns have not yet been worked out in detail.

† As was explained at the beginning of this Chapter, the population increased between 1921 and 1931 from 320 to 353 millions.

nisation as one of the eight most important industrial States in the world, and to claim a seat on its governing body.

Another point to be emphasised is the comparative novelty of industrialism in India, and the rapidity of its growth. Prior to about 1880, the number of organized industrial concerns in this country was extremely small, and it is only during the last three decades that undertakings such as mining, railway and dockyard work, the manufacture of iron and steel, paper, matches, and so forth, have come to play an important part in the country's economic life.

Owing partly to this rapid extension of modern industrial activity and partly to the country's social and geographical peculiarities, India can scarcely be said as yet to possess an urban proletariat in the sense in which that term is understood in other industrial countries. Hitherto there has been no such severance in culture or even in function as has occurred elsewhere between the industrial operatives and the inhabitants of the rural districts from which they have been drawn. The Indian factory hand is as a rule an essentially migratory individual, who visits the towns or industrialized areas at certain seasons,—as for instance during the normally slack periods of agricultural operations, or in times of scarcity or famine, or else for a few years of life only, in order that he may accumulate a little capital; but he has no intention of settling in them permanently, nor does he usually bring his family with him. In consequence he is liable to abandon his job for very trivial reasons, and should he fail to find some alternative occupation in the towns will probably wend his way back to his ancestral village, in which in any case he generally spends a large part of his life as an ordinary cultivator. And the migratory habit of Indian industrial workers is far from being their only peculiar characteristic; they are also bewilderingly heterogeneous. In the large industrial towns are to be found labourers drawn from every part of the country, differing profoundly in race and caste and creed, having widely contrasting standards of living,—as for instance over such questions as the use of a vegetarian or non-vegetarian diet, which naturally makes a substantial difference to a family budget when the annual income per head does not exceed Rs. 100,—and speaking languages and dialects which are often incomprehensible to one another; yet despite their differences finding

themselves herded together by day in the indiscriminate uniformity of factory conditions, and spending their leisure moments in the congested tenement houses of the industrial quarter.

These two factors,—namely the migratory habits of the industrial population, and their heterogeneity,—obviously account for many of the peculiar problems of Indian urban life. For example, the great duration of some of the strikes which have occurred in the industrial areas during recent years is in large measure explained by the fact that the strikers are not solely dependent upon earning town wages; even those who do not actually return to their village to resume their traditional occupations are often fortified by the knowledge that they can do so if they wish. Similarly the comparative weakness of Trade Unionism in India has been chiefly due to the fact that there is generally speaking no static urban proletariat upon which these organizations can be based, and that consequently the leaders of the Trade Unions, who in any case are largely drawn from the literate classes, have comparatively little hold over the uneducated and impermanent union members. Moreover, the naturally low output of the average Indian industrial labourer,—which in part is due to the traditional and climatic causes which we have seen to be also responsible for the poor productivity of the ryot,—is aggravated by the fact that he cannot be relied upon to stay in the same place for any determinable length of time; and undoubtedly the speed and extent of the labour turnover in the important industrial areas is a serious handicap to the country's economic development. Again, the fluidity and transience of the urban population is responsible for abnormalities in the statistics of population in the larger cities of India which are probably unparalleled in any other part of the world, and have given rise to social problems of great complexity. The Census Report for 1921, for example, showed that of the total population of Bombay, only 16 per cent. had been born in the city, and that males outnumbered females in the proportion of 1,000 to 524; similarly, less than 25 per cent. of the inhabitants of Calcutta and its suburbs had been born there, and the sex ratio was as low as 500 females to every 1,000 males; while in Rangoon the corresponding figure for females was only 444. It will readily be understood that facts such as those necessarily give rise to a multitude of intricate human problems. On the other hand the, migra-

tory habit of the workers has at least one practical advantage, in that it renders the problem of industrial unemployment much less acute and intractable in India than it is in the more developed States of the West,—though the absence of satistical data prevents our reinforcing this statement with detailed facts and figures. But broadly speaking it would be true to say that while unemployment does occur sporadically in India among sections of the industrial population, all the labour available can in normal years be absorbed, and on many occasions the problem has been not so much to find work for the workless as to find workers for the work. Moreover unemployment in Indian industrial areas often arises not from causes inherent in the industries themselves, but from totally extraneous factors such as crop-failure in the surrounding rural districts, as a result of which an exceptional quantity of agricultural labour for which no use can be found flows into the towns, and congests an industrial employment market already recruited from rural sources. When unemployment in India is under discussion, it is usually not unemployment amongst the artisans and manual labourers of the town that is meant, but unemployment amongst the educated middle classes, and there is no doubt that this constitutes an appalling problem whose gravity increases year by year. But it is not relevant to this context.

This brief summary will have been sufficient to indicate the exceptional complexity of industrial problems in India, and the magnitude of the difficulties with which the Government is confronted in its endeavours to ameliorate the condition of the urban workers. Admittedly the state of the labouring classes in the large industrial towns such as Calcutta, Bombay, Madras, Rangoon, Ahmedabad, and Cawnpore is in many ways very unsatisfactory, and there is as yet a vast amount to be done in such matters as the provision of medical facilities, proper sanitary arrangements, canteens, cloakrooms, schools for juveniles, *crêches* for the children of female employees, workmen's insurance, and labour exchanges, before it can be said that the condition of the industrial operatives in India is comparable to that to which similar classes in the more advanced and powerful States of Europe and America have become accustomed during the last two generations. But, from the very nature of the difficulties to which we have drawn attention, this is inevitable. Moreover, there are other factors quite apart from the

two fundamental problems we have mentioned which should be borne in mind. It should be remembered that the introduction of modern industrial activity into sub-tropical climates is of comparatively recent date, and has given rise to peculiar troubles towards whose solution experience gained in the industrial States of the West is often of very little assistance. There is also the apathy of the poorer classes in India to be contended with,—though this is possibly less extensive than is commonly supposed; if however those primarily concerned show little active desire to improve their conditions, or no capacity to do so wisely, then obviously even the most far-reaching attempts at amelioration, either on the part of the Government or private organizations, must yield poor results. Again, there is the fact that female labour is still extensively employed in certain Indian industrial concerns; and in a country where child-marriage is prevalent and spinsterhood very unusual, the results of this, from the medical point of view, are necessarily grave. Strenuous efforts are being made to deal with the problem, but since the coal-mines of Bengal, Bihar and Orissa, and the Central Provinces alone employ 36,000 women, who constitute about 14 per cent. of the total labour force, it will be readily understood that it is one which cannot be easily solved. Yet another factor which interferes with endeavours to improve the condition of the industrial workers is the system whereby they are recruited. In many towns aspirants for industrial employment who are newly arrived from the country put themselves in the hands of " jobbers ", who undertake to secure them work on the condition that they obtain a commission on the earnings obtained and are empowered to make deductions from wages in certain circumstances,—an arrangement which gives rise to evils that can readily be imagined.

In the face of these manifold difficulties, the improvements which have already been effected in the circumstances of the industrial workers, as a result of the activities of the Government, of employers, and of private philanthropic organizations, are remarkable. In cities where Improvement Trusts exist, a good deal of attention is devoted to the provision of better homes for the workers, and employers are also realizing the practical advantages of housing schemes. Appreciable progress has also been achieved during the last decade in the provision of *crèches* for children and

of women doctors to safeguard the health of female workers, and organizations such as the Servants of India Society, and the Poona Seva Sedan Society, do a great deal of good by focussing public attention on such questions as housing, food supply, indebtedness, medical aid, educational facilities and so forth. These activities have been energetically supported by the State, as for example the system of inspections instituted under the Mines and Factories Acts, and by numerous special enquiries such as those undertaken by the Royal Commission on Labour, the Bombay Labour Office, the various bodies which have been investigating problems like that of the ventilation of cotton mills, and the boards set up under the Trade Disputes Act. But naturally the most important aspect of the Government's activity on behalf of labour is not so much enquiry as legislative action, in which it has had the advantage of being able to make use, to a large extent, of the experience of Great Britain and other countries in which industrialism developed earlier. In consequence the last two generations have witnessed the passage of a large number of measures such as the Factories Acts in 1881, 1891, 1911, 1922, and 1926, the Mines Acts of 1901 and 1923, the Workmen's Compensation Act of 1923, the Trade Unions Act of 1926, the Trades Disputes Act of 1929, and the Maternity Benefits Acts passed in the Bombay Presidency and the Central Provinces in 1929 and 1930, respectively,—which together constitute a substantial legislative achievement.

Among the reforms effected under the Factories Acts has been the introduction of a regularized 60-hour week, the raising of the minimum age of children employees from 9 to 12, a widening of the official definition of the word "factory", and a complete prohibition of night work for women and children. The latest report on the working of the Act covers the year 1929. During that period the total number of factories rose from 7,863 to 8,129. The largest increase was in Madras; in the Punjab and Delhi there were small decreases. The total factory population increased from 1,520,315 to 1,553,169, and the number of women employees rose from 252,933 to 257,161. In Bengal, six cases were instituted against the illegal employment of women. The decrease in the number of children working in factories continued satisfactorily. It is reported that the Bombay mills have practically ceased to employ children, and in Madras the restrictions placed on the use

of child labour under the Act have resulted in employers showing a marked preference for adult labour wherever possible. As regards the length of the working week, out of every 100 factories employing men, in 27 they worked for 48 hours or less per week, in 13 for more than 48 but not more than 54 hours, and in 60 for more than 54 hours. The average number of hours worked by women was slightly less. For some years the number of accidents recorded in factories has been increasing, and in 1929 the total was 20,208 as against 16,348. The increase is of course to a considerable extent explained by the fact that the Workmen's Compensation Act operates as an inducement to the reporting of injuries. The number of fatal accidents was reduced from 264 to 240. In Bombay, out of nearly 3,000 reported accidents that occurred in two large railway workshops, only 199 could in any way be attributed to machinery. The Factory Inspection Departments in every Province have been strenuous in explaining the necessity of fencing and guarding dangerous machinery. There was no noteworthy development during the year with regard to housing accommodation for labour except in Madras and Bombay. In the former Province 40 factories,—in addition to the 211 which had already done so,—provided housing for their operatives; and in Bombay the Government of India housing scheme at Nasik Road, together with schemes instituted by the Gokak Mills and by the two chief railway undertakings, have improved the accommodation substantially. The standard of ventilation and cleanliness in factory premises is reported to have been well maintained during the year, and various other measures to secure the welfare of the workers continued to receive the attention of the factory owners. Bombay shows the largest variety of activities in this direction. *Crêches* have been set up in a number of centres and amongst the numerous benefits conferred by them has been a notable diminution in the practice of drugging infants with opium. In addition, several special hospitals have been constructed, as for example those at the Raja Narsinggirji Mill in Sholapur and at the Calico Mills in Ahmedabad, the former of which cost Rs. 1¼ lakhs. Active interest is also being taken in "baby weeks", and in certain places the problem of indebtedness among operatives is being alleviated by the development of co-operative credit societies. Substantial progress in welfare work of this

kind is also reported from Bengal. The Reliance Jute Mills recently started a clinic in which attention is given free to all female workers and to the wives and children of male workers. The Angus Company appointed a woman doctor and established a girl's school with accommodation for 50 pupils; in the previously established boys' school physical training in an out-door gymnasium forms part of the curriculum. Convictions obtained during the year for breaches of the Factories Act totalled 1,302 as against 1,348. In most Provinces it is reported that the fines imposed by magistrates are still inadequate, and in the Punjab, where the average fine per offence was only Rs. 34, it appears that some of the more unscrupulous factory employers find it more profitable to break the law than to obey it. This is particularly the case where the employment of women and children and the provision of fencing for dangerous machinery are concerned. A minor alteration in the Factories Act was made during the year with the object of empowering local Governments to frame rules providing for precautions against fire. The necessity for this measure was realized owing to a fire which took place in a match factory in Burma where boxes are filled by hand. It was introduced as a Bill amending the Indian Factories Act of 1911 in March 1931 and passed on the 1st of April. This was the only legislative enactment dealing with labour undertaken during the year.

Although the peculiarities of Indian urban conditions,—such as shortage of qualified medical men, the migratory propensities of the workers, and their illiteracy,—render provision for industrial compensation to the extent existent in other countries difficult, the Workmen's Compensation Act of 1923 was nevertheless an extensive and beneficial measure, since while restricted to workmen whose occupation is hazardous and who are employed in more or less organized industries it nevertheless includes within its scope the bulk of the employees in factories, mines, and railways, besides a number of other workers. During 1929 the number of cases coming within the purview of the Act, so far as workers in factories, mines, railways, docks, and tramways were concerned, increased from 16,678 to 18,865, and the figures for compensation rose correspondingly from Rs. 10,95,730 to Rs. 12,60,164. As has already been indicated, and as is confirmed by these figures, there seems no doubt that the provisions of the Act are becoming

more widely known. In Bombay 89 per cent. of the factories which were subject to the operation of the Act submitted returns as against 78 per cent. in the previous year, and there was a not dissimilar improvement in Bengal. The Madras Report states that employers are now tending to take more initiative in complying with the Act, and the number of proceedings instituted for recovery of compensation has decreased by nearly 50 per cent. Relatively little progress, however, was apparent in the United Provinces, where it seems that the workmen owing to their illiteracy often fail to get due compensation from their employers. In Bombay about 43 per cent. of the cases were dealt with by insurance companies, which is considered a satisfactory tendency. The work of the agencies which have sprung up in the city for assisting workmen to obtain compensation was however interfered with by the proprietor of the largest agency absconding with the funds.

As has already been explained, Trade Unionism in India is of comparatively recent growth, and no unions of importance existed prior to 1918. During the following four years, however, the movement developed rapidly owing to the distress brought among industrial workers by the failure of the wage-level to keep pace with the rise in the price-level, and during this period strikes were numerous, bitter and prolonged. Owing however to the special characteristics of Indian urban labour, the Trade Unions which were formed at this time mostly failed to extend their activities beyond what would be expected of militant strike committees, and tended to disintegrate as soon as the dispute from which they had originated was settled. This led to a state of affairs very confusing and unsatisfactory to Government, to employers, and to workmen alike; but the Trade Union Movement had nevertheless taken root, and with a view to encouraging its growth on the right lines a Bill designed to provide for the protection and registration of Trade Unions was drafted in 1924, and passed as the Indian Trade Unions Act in 1926. This measure offers to all *bonâ fide* Trade Unions the opportunity of registration, which involves both liabilities and privileges. On the one hand registered Unions are required to frame and supply rules on certain matters, to have their accounts audited, to compose their executive of persons at least 50 per cent. of whom are actually engaged in the industry concerned, and to confine expenditure to certain specified objects; on

the other hand the officers and members of the Unions obtain protection from liability for breaches of contract in connection with acts done in furtherance of trade disputes, and for certain tortious acts of their agents, and the officers are in some respects rendered immune from prosecution for criminal conspiracy. The report on the working of the Act for the year ending on the 31st of March 1930 contains a number of interesting statistics for the two previous years also. In 1927-28 there were 29 registered Unions in India with a membership of 1,00,619. In 1928-29 the number had risen to 75 and the membership to 1,81,077, and the corresponding figures for 1929-30 were 104 and 2,42,355. The average membership of Unions however in this last year was only 2,693. Bombay had the largest total membership but rapid progress has of recent years been made in Madras and Bengal also. Some progress was recorded in the Punjab, but in the United Provinces and Bihar and Orissa the movement is evidently weak, and in Burma and Assam has scarcely started. By far the largest membership is found in registered railway unions, which in 1929-30 claimed 1,59,444 members. A surprising feature is that registered membership of Seamen's Unions amounted to as much as 37,121 while the total for the textile industry was only 16,183. The report states that although the Trade Union Movement has been in existence in this country for over a decade it is still only in its infancy. Serious difficulty is still created owing to the large number of unregistered and ephemeral unions which exist,—a defect which is particularly conspicuous in Bombay, where in March 1930 the number of registered and unregistered unions was 40 and 54 respectively. Although the unregistered unions are as a rule comparatively unimportant, and have a smaller aggregate membership than the registered unions, they nevertheless include some important bodies such as the Ahmedabad Labour Union, which has a membership of 25,000. A further difficulty is caused by the fact that the membership figures in many instances cannot be relied on. It is by no means unusual for unions to maintain on their registers the names of members who have long ceased to make any monetary or other contribution to their activities. Thus in the Bombay Presidency the total amount of unpaid subscriptions of 33 registered unions alone is reported to have amounted during 1929-30 to nearly Rs. 1,34,000. On the other hand, the report makes it clear that,

in the country as a whole, registration is becoming increasingly popular owing to the practical advantages it confers.

The latest important labour measure to be passed was the Trades Disputes Act of 1929. Its object was to provide means of preventing, or composing, industrial disputes by setting up Courts of Enquiry and Boards of Conciliation,—the function of the former being to investigate and report on such questions connected with disputes as might be referred to them, and of the latter to negotiate and if possible effect a settlement. The awards of these tribunals are not binding on the parties concerned, but reliance is placed on the pressure of public opinion exerting a restraining influence. During 1929-30 the machinery of the Act was put into operation on two occasions,—once by the establishment of a Court of Enquiry to investigate trouble in the Bombay textile industry, and the other time by the appointment of a Board of Conciliation to deal with the dispute on the Bombay, Baroda and Central India Railway. In 1930-31 the provisions of the Act were resorted to once only, in connection with the dock labourer's strike in Rangoon during May which will be described shortly. The report of the Board of Conciliation constituted to compose this dispute was completed before the end of the month.

There were far fewer serious labour disputes in British India in 1930 than during the previous year. Although the number of strikes was 148 the number of men involved was only 196,301, as against corresponding figures of 141 and 531,059 in 1929. Working days lost amounted to 2,261,731 as against 12,165,691. In about 61 per cent. of the strikes the workers failed to gain any concessions. The worst strike was that on the Great Indian Peninsula Railway in which 22,608 men were involved, and which lasted from the 4th of February till the 21st of April, resulting in a loss of 893,617 working days. A further 548,185 working days were lost as a result of the strikes in the old Champdary Jute Mill at Hooghly and the Jute Mills at Titaghur. Other troublesome disputes were the strikes in the Harvey Cotton Mills at Papanasam in Tinnevelly District, in the Chittivalsa Jute Mills in Vizagapatam District, and in the port of Rangoon, in which 83,300, 80,584, and 77,400 working days respectively were lost. The strike in Rangoon was of particular importance owing to the ferocious rioting (described elsewhere) which it provoked between the

Burmese and Coringhi dock labourers. Three causes are mentioned as having contributed to the dispute, namely resentment among the labourers at the operation of the *maistry* system, *hartals* organized for political reasons, and competition between the two Indian-owned shipping companies and the British India Steam Navigation Company.

In our previous Report reference was made to the work done by the Royal Commission on Labour, which was appointed early in 1929 to undertake a comprehensive examination of Indian industrial conditions. The Commissioners completed their first tour in India in March 1930, worked in London till August, visited Ceylon and Burma in October and November, and then proceeded to Delhi to prepare their report, which was signed in March 1931. It was not however published until after the close of the period now under review, and reference to the many very important recommendations made in it is therefore not possible in this volume.

Apart from the specifically Indian aspect of the problems we have been considering, they have also important international implications. As a member of the League of Nations and the International Labour Organization, India has been closely concerned with the passage of various draft Conventions and Recommendations concerning labour, which have had a good deal of influence on the shaping of such measures as the Indian Factories Act, the Workmen's Compensation Act and the Mines Act; and the international aspect of labour questions seems likely to become increasingly important in future,—although, during the year under review, there was some diminution in the number of important matters of this kind that came up for consideration.

Mention was made in our previous Report of two Recommendations adopted by the 12th Session of the International Labour Conference concerning the prevention of industrial accidents and responsibility for the protection of power-driven machinery. A resolution urging that the Governor-General in Council should examine the possibility of giving effect to the former Recommendation in India was moved in the Legislative Assembly in March 1930, but postponed until the following Simla session, when it was adopted. The Government of India thereupon addressed a circular letter to the provincial Governments and administrations requiring them to consider the terms of the Recommendation in detail and

submit replies concerning its applicability to India before the end of April 1931.

At the 14th Session of the International Labour Conference, which took place in Geneva during June 1930, two Draft Conventions of importance were adopted, one dealing with forced labour, and the other with hours of work in commercial undertakings and offices. The Conference also adopted a number of subsidiary Recommendations. As was explained last year, Article 405 of the Treaty of Versailles requires that Draft Conventions and Recommendations of the International Labour Conference should be brought before " the authority or authorities within whose competence the matter lies, for the enactment of legislation or other action "; and since the ratification of the two Conventions of June 1930 would necessitate legislation, they must be placed for consideration before the Legislative Assembly and the Council of State. During the latter part of the year under review preliminary examination of the detailed provisions of the Convention regarding forced labour was in progress in the Home Department. Notice of a resolution to be moved in both Houses of the Indian Legislature, recommending that the other Convention, namely that dealing with the regulation of hours of work in commercial undertakings and offices, should not be ratified by India, was received during the year. The resolution was discussed in the Council of State on the 28th of March and adopted, but it did not come up before the Legislative Assembly until after the close of the period under review.

CHAPTER IV.

Communications.

The Parliamentary edition of this book goes under the title of "The Moral and Material Progress" Report, and there will certainly be some among our readers who would assert that there are few indications of real progress of either of these kinds to be found in some of our Chapters. The political situation, for example, which has arisen out of the importation of Western democratic institutions, is claimed in certain quarters to be retrograde rather than progressive, on the ground that the attempt to encourage the growth of democracy in a country such as India, which has always been autocratically ruled, was absurd at the best of times,—that is, when people whole-heartedly believed in the efficacy of this instrument of Government elsewhere,—and now that it is becoming discredited even in the countries of its origin, to persist in the attempt is criminally foolish, and must inevitably lead to strife, disillusion, and disaster. Others, contrariwise, would contend that the endeavours made by the British to stimulate the development of self-governing institutions here have never been sincere or spontaneous, but extorted from them by the force of a popular demand; that the democratic colour of the existing constitutional structure is mere *camouflage*, since in point of fact the country is still ruled by an alien bureaucracy whose interests and wishes are usually in conflict with those of the people; and that India can only find her soul by means of a revolutionary outbreak which will sweep all traces of the present system of Government away, and enable a semi-Socialist national State to be established on the basis of universal suffrage. These of course are extreme and pessimistic views, but both are widely held; and when we move from political to social problems there is also room for many differences of opinion. The contention, for instance, is frequently made that despite what we have said on the subject in the first part of Chapter III, there has in fact been no improvement worthy of the name in the state of the rural population under the British *Raj*. Some indeed would go so far as to assert that the peasants are actually poorer now than they ever were before; but even granting that there is insufficient proof for this, it is argued that the evidence to the contrary brought forward by apologists for the Government is practically meaningless, since in point of fact the circumstances

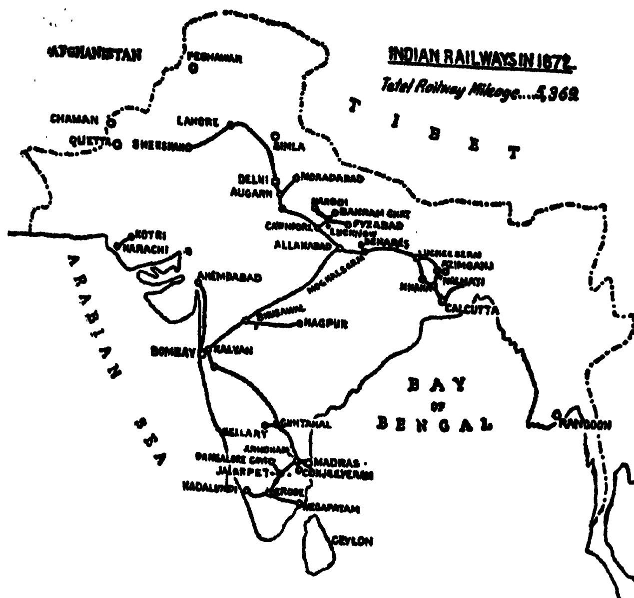
of life in Indian villages could scarcely be worse than they are. Moreover it is pointed out that if every attempt at improvement,—by means of better sanitation, better marketing methods, the introduction of modern agricultural implements, the establishment of health centres and so forth,—is accompanied by an enormous increase in population, the pressure upon the means of subsistence, which is the root cause of the whole trouble, must continue in at least as acute a form as at present. Again, there are those who would deny that the industrialization of this country,—the establishment of cotton mills, mines, iron works and so forth, and the consequent growth of an urban proletariat,—is in any sense a desirable development, since it is introducing into India forces which, even in the Western countries which gave birth to them, have created a whole train of unsolved social problems of extraordinary complexity, and which on this uncongenial soil are liable to have yet more lamentable effects. Fortunately, however, as regards the subjects which will be under discussion in this Chapter, there is not quite the same scope for dispute. From the point of view of material progress alone, the achievement of those who have been responsible for the creation of India's railway system, her posts and telegraphs, roads and shipping, wireless stations and aerodromes, is extremely impressive, and has provided the country with a system of communications of which,—considering her climatic and geographical peculiarities, and her poverty,—she may well be proud, and which has undeniably brought many practical benefits to her inhabitants. On the other hand, for the nationalist politician, as well as for the philosophic student of human affairs, the far-reaching "moral" or cultural revolution which modern methods of communication are effecting throughout this country,—by widening the range of opportunities amongst all races, castes, and classes of the Indian population, and by enabling them to establish closer contacts with one another, and thus to achieve a community of interests which hitherto they have lacked,—is an event of immense significance, since it is enabling the ideal of a united India, which hitherto has been so elusive, to come at last within the range of realization.

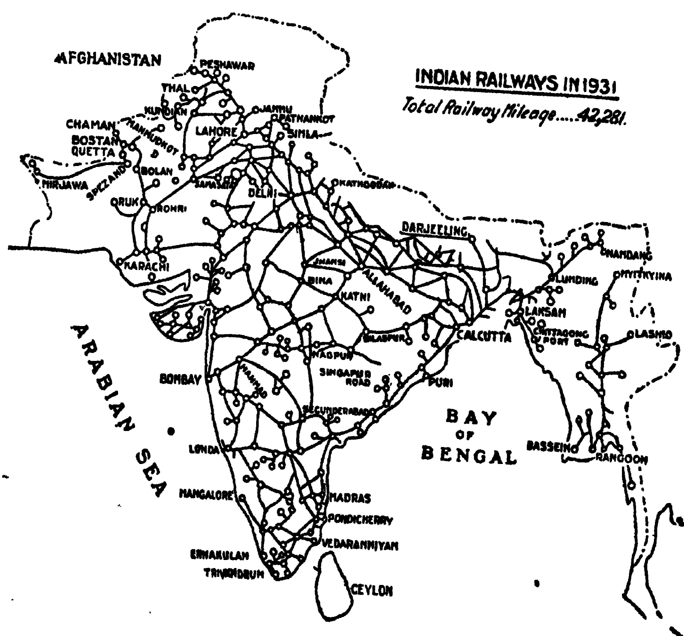
Of the various means of transport available, the railways,—owing to the country's vast size,—are naturally by far the most important, and the active policy of development which has been pursued by those responsible for them must inevitably exercise a

profound influence upon India's economic and cultural development. In Chapter VI will be found an account of the financial position of the railways during the year under review, and here we will concern ourselves with general administrative questions only. At the outset, for the benefit of such readers as are unfamiliar with Indian affairs, it is desirable to explain that the methods of railway administration in this country and in Great Britain are radically different, since no less than 74·2 per cent. of the route mileage of Indian railways is owned and 44·7 per cent. is directly managed by the State. The control, financing, and development of the railways therefore falls largely on the Central Government, which acts in these matters through the body known as the Railway Board. As now constituted, the Board consists of the Chief Commissioner, a Financial Commissioner and three Members, and is assisted by five Directors expert in civil engineering, mechanical engineering, traffic, finance, and establishment and labour, whose functions are to relieve the Board itself of routine work, by disposing of all detailed or technical matters themselves, and thus to enable it to concentrate its attention on the larger questions of policy. This arrangement,—except for the fact that a post for one new Member was created in 1929,—dates from 1924, when, as a result of the recommendations of the Acworth Committee, considerable changes were made not only in the railway finances, but also in the composition and functions of the Railway Board and the administrative organization as a whole. For some time prior to that date it had been apparent that the increase in railway mileage and the growing complexity of traffic problems under modern conditions would necessitate some changes, since the burden of work thrown on the staff of the larger railways by the "departmental" system of administration then existing had become so heavy as to militate against efficiency. Investigation indicated that the remedy lay in adopting an arrangement which had been applied with success in other regions such as South Africa and parts of America where railways are also spread over vast areas. The main object of this new "divisional" system, as it is called, is to fix entire responsibility for the working of any one section of line on a single officer. The "divisions" administered by these officers naturally vary considerably in magnitude according to circumstances, but as a rule are a good deal larger than the old railway "districts", each of which used to

be controlled by three or more officers individually responsible to different departmental chiefs at railway headquarters. Under the new system, on the other hand, officers in charge of the "division", who enjoy much wider powers than were exercised by the "district" officers, are responsible for administering the divisions with the assistance of technical officers such as the divisional engineer, transportation officer, and rolling-stock officer. This arrangement prevents an overlapping of functions and enables the working of the various branches to be better co-ordinated.

A glance at the map opposite will give some indication of the extent of railway development in India within comparatively recent times. In 1872 the total railway mileage in India was a little over 5,300. By the end of March 1931, it was approximately 42,281 which is nearly double that of the United Kingdom. Considering how vastly greater and more populous India is than the United Kingdom this may not at first seem a very impressive comparison, but it must be remembered that the average income per head of her inhabitants is so appallingly low that there is relatively little money available for railway travel at the best of times, and that throughout the country there are immense areas of mountain and desert and swamp over which population is sparse and railway construction almost impossible,—whereas practically the whole of the United Kingdom is geographically accessible and in some way productive. In the circumstances, and taking all the difficulties into consideration, the fact that in India within under 60 years about 36,981 miles of railway have been constructed is certainly impressive, and constitutes an achievement of which the State and the companies concerned may well be proud; and in one particular respect, namely long-distance passenger services, the standard of efficiency and comfort maintained in the Indian railways is so high as to be unsurpassed in any other country in the world. As regards the possibilities of further improvement in the immediate future, however, the position is far from bright, since all projects for new development have had to be curtailed owing to the deplorable effects which the trade depression and the Civil Disobedience Movement have had upon railway finances. The implications of this state of affairs were discussed in detail in the speech made by the Commerce Member in presenting the last Railway Budget to the Assembly in March,—a condensed version of which is incorporated in Chapter VI. Nevertheless, since the construction of


INDIAN RAILWAYS IN 1872
Total Railway Mileage....5,362
AFGHANISTAN
PESHAWAR
T I B E T
CHAMAN
QUETTA
LAHORE
SIMLA
DELHI
MORADABAD
KOTRI
KARACHI
AHMEDABAD
ALLAHABAD
LUCKNOW
FYZABAD
BENARES
CALCUTTA
NAGPUR
BOMBAY
KALYAN
A R A B I A N   S E A
B A Y
OF
B E N G A L
RANGOON
BELLARY
MADRAS
CONJEEVERAM
JALARPET
ERODE
NEGAPATAM
CEYLON


INDIAN RAILWAYS IN 1931
Total Railway Mileage.....42,281.
AFGHANISTAN
PESHAWAR
THAL
JAMMU
PATHANKOT
CHAMAN
BOSTAN
QUETTA
LAHORE
SIMLA
BOLAN
MIRJAWA
ROHRI
DELHI
KATHGODAM
DARJEELING
KARACHI
JHANSI
BINA
KATNI
ALLAHABAD
NAGPUR
CALCUTTA
LUMDING
LAKSAM
MYITKYINA
LASHIO
BOMBAY
SINGAPUR ROAD
PURI
SECUNDERABAD
B A Y
OF
B E N G A L
BASSEIN
RANGOON
ARABIAN SEA
LONDA
MANGALORE
MADRAS
PONDICHERRY
VEDARANNIYAM
ERNAKULAM
TRIVANDRUM
CEYLON

new works undertaken before the present financial difficulties arose has not been suspended, the total length of new line opened to traffic during the 12 months ending on the 31st of March 1931 was fairly satisfactory, amounting as it did to 565·5 miles; and in addition, approximately 1,598 miles remained under construction at that date, and will, it is hoped, be completed during the next few years. An important work which was taken in hand during the latter part of the period under review was the construction of a broad gauge line 113 miles long between Bidar and Purli in H.E.H. the Nizam's territory, which will serve a fertile area and carry traffic which hitherto has had to be carted over long distances.

As has been pointed out in previous editions of this Report, a striking feature of the Railway Board's development programme in recent times has been the absence of ambitious schemes of trunk-line construction. Almost all the lines lately built or projected have been small branches or feeders, which are intended to bring the benefits of railway service nearer the doors of the rural population and thus enable produce to be conveniently moved and marketed. In view of the fact that nearly 90 per cent. of our population is devoted to agricultural pursuits this policy has obviously much to commend it, and it is rendered possible by the fact that India is already well served by trunk lines which, like the telegraph system, are based on a scheme outlined by Lord Dalhousie over 70 years ago. He conceived the idea of a system of great trans-Indian routes linking the interior of each Presidency with its outlying parts and the different Presidencies with each other, and including lines from Calcutta to Lahore, from Bombay to the North-West of India, from Madras to Bombay, and from Madras to the Malabar coast; and these now form the skeleton to which have been appended the numerous subsidiary lines which cover the country. There are however a few gaps in the original skeleton which for one reason or another have remained unfilled. Work on the sanctioned portion of one of the smaller gaps, namely the Central India Coalfields Railway,—which will cross the space lying between the East Indian and Bengal-Nagpur Railways in Chota Nagpur and the Central Provinces,—was completed during the year, and the line was opened to traffic;* and the construction

* Sanction for an additional 155 miles of this line, however, has yet to be obtained.

of the Raipur-Parvatipuram Railway, which will complete the link between the Central Provinces and the East coast, is now far advanced, only 74 miles remaining to be completed out of a total of 241·23. Before the skeleton could be said to be theoretically quite complete, however, there are three other trunk lines which would need to be constructed, but hitherto they have not appeared likely to be financially justified. One of these is the Bombay-Sind connection, another is a broad gauge line between Karachi and the United Provinces, and the third is a line between India and Burma. The first, because it is to some extent short-circuited by an easy sea-route, was not until recent years considered a promising commercial proposition, but the increase of production and population in Sind which is expected to result from the extensive irrigation operations there, has now rendered its construction probable in the near future; during the year a final location survey for the line was put in hand and will shortly be completed, and the intention is to proceed with the work as soon as funds are available for it. The broad gauge connection between Karachi and the United Provinces, however, is not at present felt to be justified, owing to the fact that a metre gauge connection already exists, and is not seriously overstressed with traffic. Of the three possible routes for the trunk line which has from time to time been projected between India and Burma, that *viâ* Akyab seems the most practicable, but, in its entirety, it would not at present prove remunerative; a start was however made just before the period covered by our previous Report with a short branch 25 miles long between Chittagong and Dohazari.

Apart from the actual building of new lines, the Railway Board had in hand throughout the year a number of other constructional works which deserve mention. In last year's Report reference was made to the electrification of the Madras suburban sections of the South Indian Railway, and of the main line section of the Great Indian Peninsula Railway between Kalyan and Igatpuri. Good progress was made with both these undertakings during 1930-31; the latter was indeed completed in May 1930, while the former it is believed will be brought into use in 1931-32. Amongst other works with which progress was made was the doubling of the 142 miles of line between Cawnpore and Tundla, which had proved to be seriously overstressed with traffic, and the transfer of the workshops for the broad gauge section of the Bombay, Baroda


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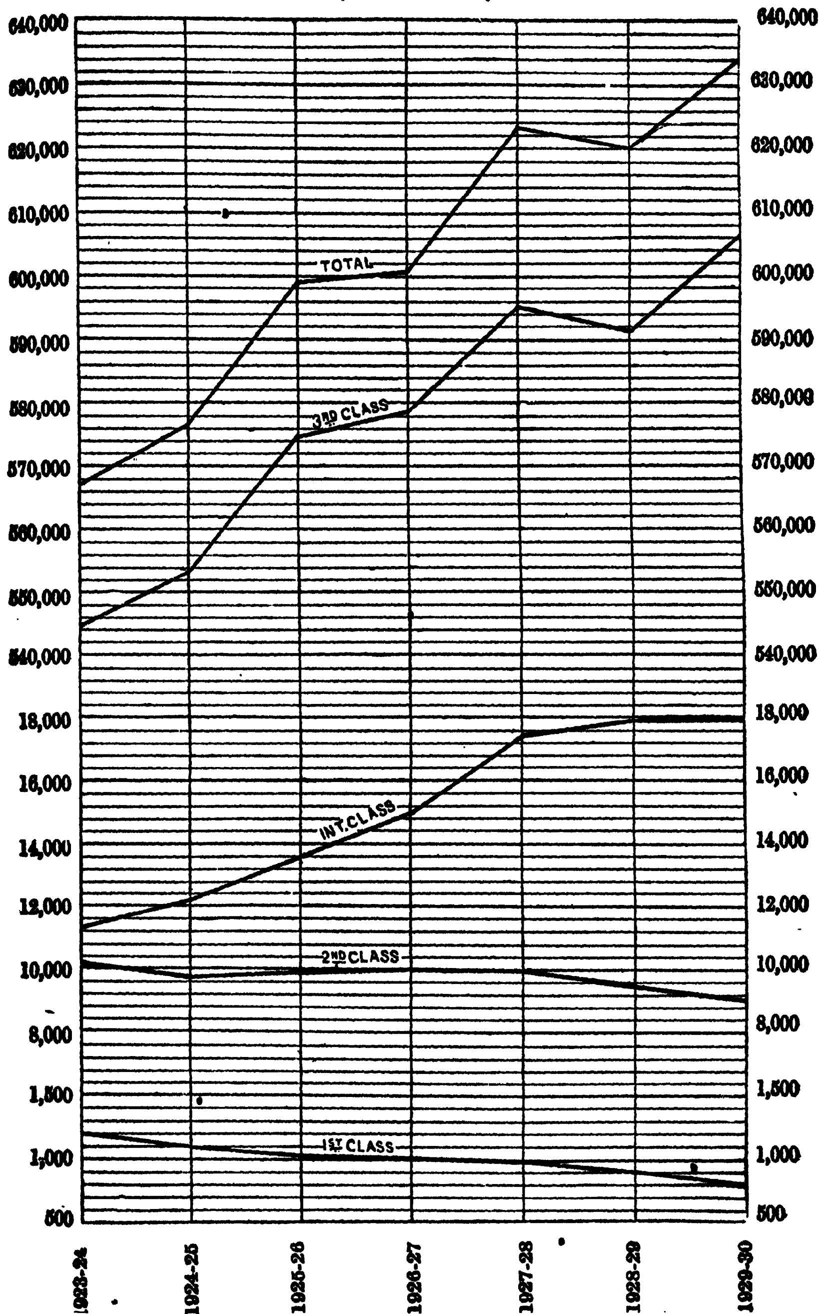
and Central India Railway from Parel to Dohad. The various constructional improvements which have been undertaken in recent years, such as the remodelling of workshops and building of bridges and so forth, were also continued so far as the funds available permitted. The quantities of new locomotives and rolling stock acquired in 1930-31 compared not unfavourably with those of the previous year, considering the circumstances; 101 new standard locomotives were ordered from abroad, and orders were placed for the manufacture in India of 284 standard underframes and 3,808 standard goods wagons for broad and metre gauges. In addition to these special activities, the Railway Board and the Agents of the different railways devoted a considerable amount of attention, as in previous years, to general improvements in open-line facilities, and substantial sums were expended on renewing rails and sleepers, remodelling station yards and marshalling yards, and providing better facilities for the comfort of lower class passengers, especially in such matters as water-supply, waiting and refreshment rooms, booking-hall arrangements, and improvements in coaching stock.

In previous Reports references have been made to the work that is being done by local Advisory Committees on railways in bringing to the notice of their respective railway administrations matters affecting the general public. These committees have now been established and are functioning on all Class I Railways, except the Jodhpur Railway. The committees have proved themselves a valuable link between the railway administrations and the public, and the interest taken in their work, and the value attached to their influence, is amply demonstrated by the number of applications received from trade associations and other organizations asking for representation upon them. Some of these requests, of course, have had to be refused, since the usefulness of the committees would be impaired if their composition became unwieldy. Pamphlets showing those recommendations of the committees which had been accepted, with or without modification, by the railway administrations, and those which, for various reasons, had been rejected, were issued quarterly during the year under review. The total number of meetings held by the committees during 1930-31 was 131, as against 122 in the previous year and 115 in 1928-29. The subjects discussed at the meetings were many and varied, and in addition to those detailed in previous reports

included the painting of railway carriages, the provision of benches and electric fans at platforms, of electric fans in intermediate and third class carriages, of special arrangements for festivals, of goods sidings, and of special trains during the marriage season, the appointment of lady ticket checkers, the reservation of compartments for ladies, the question of steamer arrangements at *ghat* sections, the inspection of railway carriages, the reservation of berths, wharfage, the provision of weigh bridges, the speeding up of trains, the provision of tourist cars and specials, and the establishment of tolls on certain railway bridges.

The Railway Rates Advisory Committee, which was constituted in 1926, continued to function under the presidentship of Sir Narasimha Sarma, formerly Law Member of H. E. the Viceroy's Executive Council. During the year it conducted enquiries into three important cases, two of which dealt with the question of the reasonableness of certain freight rates, and the third of certain terminal charges. Evidence in two of the cases was taken at considerable length and in due course comprehensive reports were issued by the Committee. At the request of the Government of India, the President of the Committee, in consultation with the Railway Member of it, took up the question of the amendment of the Indian Railways Act (1890), and for this purpose conferred with commercial bodies, chambers of commerce, traders and others interested in this matter, particularly in regard to the enactments dealing with the carriage of goods and passengers.

The results obtained from the work of the Central Publicity Bureau of the Indian Railways during 1930-31 were not so favourable as during the previous year. Although the amount of publicity which India has recently obtained will probably,—when conditions become more favourable,—cause a large influx of visitors who wish to see for themselves what a country about which they have read so much is really like, the political disturbances in India and the trade depression throughout the world did in fact prevent many travellers from visiting this country during the year under review. As a result of the serious loss of revenue which the decline both in traffic from abroad and in local traffic in India brought about, the amount of money available for publicity was substantially reduced. Various endeavours were accordingly made to develop all possible sources of new revenue, among which was the appointment of an advertising manager in London in January


NUMBER OF PASSENGERS CARRIED ON
INDIAN RAILWAYS
(IN THOUSANDS)
640,000
630,000
620,000
610,000
600,000
590,000
580,000
570,000
560,000
550,000
540,000
18,000
16,000
14,000
12,000
10,000
8,000
1,500
1,000
500
TOTAL
3RD CLASS
INT. CLASS
2ND CLASS
1ST CLASS
1923-24
1924-25
1925-26
1926-27
1927-28
1928-29
1929-30

1931 to procure advertisements for display on Indian railways. The production of films continued to be an important part of the Bureau's activities. Apart from tropical films, the most interesting productions of the year were films of Kashmir and Shillong and of the Inauguration Ceremonies at New Delhi. Three "Safety First" films were also prepared, and a film illustrative of the remarkable growth of the canal colonies in the Punjab, entitled "The Desert Awakes", was made in collaboration with the Director of Agriculture of the Punjab Government. The use of travelling cinema cars was suspended in February 1931 owing to the necessity for economy, but during the first ten months of the financial year 907 shows were given on the four State-managed railways, at which the attendance aggregated well over 1,200,000; and the educative value of these performances, in a country where so large a proportion of the population is illiterate, is certainly great. The films shown dealt with educational subjects such as health and agriculture, and topics which might be expected to encourage travel to pilgrim centres,—as well as railway instructional matters, and amusements. The expansion of the photographic output of the Bureau continued during the year, largely as a result of the numerous photographs which were taken of the Inauguration Ceremonies in New Delhi. The reproduction fees received more than covered the extra expense involved in ensuring that material was available for publication at the earliest possible moment after the event. Photographs of the Ceremonies taken by the Bureau,—and also by the Bureau of Public Information,—were reproduced in a large number of the leading newspapers and periodicals throughout the world. As regards the literary activities of the Railway Publicity Bureau, a second edition of the general pamphlet on India and Burma which we mentioned in our last Report, and which contains information concerning steamship lines serving India, of the facilities provided by Indian railways, and other particulars calculated to assist overseas tourists travelling in India, was produced during the year, and 60,000 copies will be distributed during 1931-32. A somewhat similar pamphlet describing the more important religious centres in India for the use of those who may wish to visit them is at present under preparation. In addition, three new pamphlets were published, together with revised editions of four of the existing pamphlets. The total number of copies of pamphlets issued by the Bureau throughout the twelve months

exceeded 318,000. The circulation of the Indian State Railways magazine continued to increase during the year. In February, a special number was issued in connection with the Inauguration Ceremonies in New Delhi, which contained a number of photographs and articles selected for the occasion, and an introductory message from H. E. the Viceroy. Steps were taken by the Bureau during the year to organize a "Safety First" campaign for Indian railways, and in addition to the three "Safety First" films already mentioned, three pamphlets intended respectively for the traffic, workshop, and engineering staff were issued and a large number of posters produced. The "Safety First" week was to have taken place during May 1931, but owing to the necessity for economy and retrenchment it was for the time being postponed. Special trains known as "bazaar specials" containing various commodities whose sale might be developed in parts of the country not ordinarily accessible to traders, were run as before on the Eastern Bengal and Burma Railways during the year, and the results obtained were satisfactory. Another matter which deserves mention is that an officer was placed on special duty for six months during the year to investigate how the railways might assist the development of Indian trade and agriculture; his report was completed in April 1931.

In our last Report we referred to an important and significant change that had been decided upon by the Government of India with regard to the acquisition of stores for the public service. The new rules then drafted, by laying it down that tenders for all purchases to be made by Government should provide for delivery in India and for payment in rupees, were directly designed to encourage indigenous industry, and may indeed be said to be identical in intention with the *swadeshi* policy which nationalist leaders have advocated in these and similar matters during recent years. During the twelve months prior to the 1st of January 1931,—when the rules actually came into force,—instructions were given that Government Departments should act in accordance with them so far as circumstances allowed. And from that date onwards, it has been provided that Departments must give preference in acquiring stores, firstly, to articles produced in India in the form of raw materials, or manufactured in India from articles produced in India; secondly, to articles wholly or partly manufactured in India from imported materials; thirdly, to articles of foreign manu-



AN INDIAN RAILWAY STATION.

facture held in stock in India; and fourthly to articles manufactured abroad which need to be specially imported,—subject always to the condition that the quality of the articles in the first two categories must be sufficiently good for the purpose for which they are intended. The implications of these rules, as the reader will readily realize, are far-reaching; for as industrial development in this country proceeds, there must now inevitably be a progressive reduction in the quantity of articles purchased from abroad for the public service. The most important organization for the acquisition of stores on behalf of Government is the Indian Stores Department, which works under the control of the Department of Industries and Labour, but in addition to this the Army Department and the Railway Board maintain separate stores departments of their own. The tendency, however, in recent years,—at any rate in so far as the Railway Board is concerned,—has been that more and more use should be made of the Indian Stores Department, and the value of the material obtained for the railways from this source has substantially increased, the figure for 1930-31 having been Rs. 127·98 lakhs as against Rs. 75·42 lakhs in 1926-27. During the year a number of additional items were included on the list of articles which the railways are required to purchase through that Department, and the question of handing over the purchase of certain others was under consideration. Detailed departmental instructions were also issued in 1930-31 for the guidance of railway officers who may be required to make purchases under the new rules, in order to prevent confusion arising over the numerous technical problems which are liable to develop in connection with them. As regards the Indian Stores Department itself, the value of articles purchased during the year 1930 was Rs. 4,10,52,000,—Rs. 89,89,000 of which represented textile stores and Rs. 3,20,63,000 engineering and miscellaneous stores. A decline occurred in the value of purchases of the former category,—owing chiefly to the general fall in prices,—but there was a substantial increase in those of the latter group, which showed a net increase of approximately Rs. 24,26,000 over the figure for the previous year. The value of stores inspected by the Department during 1930 was Rs. 6,81,53,000, as against Rs. 7,20,36,000 during 1929,—the decline being due to the unfavourable industrial conditions. These figures however do not include the value of rails, fishplates and other steel products aggregating 287,704 tons which were inspected by the Metallurgi-

cal Inspector, nor that of steel castings, pipes, and so forth aggregating 29,473 tons which were passed by the Controller of Inspection of the Calcutta Circle. The corresponding figures for these two items during the previous year were 244,052, and 62,556 tons respectively. The total number of tests, analyses and investigations carried out at the Government Test Houses at Alipore and Bombay, and at the Metallurgical Inspectorate, amounted to 30,432, which was 5,577 more than in 1929.

For some years past the Railway Board has been endeavouring to standardise rolling stock, permanent way and other railway equipment. At the outset a series of "standards committees", composed of officers from different railways, were appointed to deal with the matter, the task of preparing original drawings being distributed between the Technical Branch of the Board and the railway administrations themselves. This work however became too heavy for the officers forming these committees to undertake in addition to their normal duties, and a Central Standardization Office which should be responsible for all future standards was accordingly set up under the direct control of the Railway Board. The various "standards committees" have been retained, but their function now merely is to make available to the Board the expert knowledge of those who have control over the working of the standard locomotives, rolling stock, and equipment, so that the changes made should be soundly based upon practical experience. The present arrangement is calculated not only to increase the efficiency of the railways themselves, but also to enable manufacturers of articles required by the railways to resort to mass production on a greater scale than has so far been practicable, and thus to reduce their costs. The Central Standardization Office has been established for a period of five years in the first instance, after which its achievements will be reviewed.

In December 1929 the Railway Board drew up a scheme for reorganizing the superior services on the State-managed railways, the principal features of which were the institution of a separate *cadre* for each of the State-managed railways; the provision of a suitable reserve for leave and deputation; the abolition of the Provincial Engineering and Local Traffic Services, and the constitution of a new Gazetted Service to which deserving subordinates might be promoted. The scheme was sanctioned by the Secretary of State in February 1930 and considerable progress,—as we shall

shortly see,—has already been made towards putting its provisions into effect. In so far as the inauguration of separate *cadres* is concerned, the position is as follows. When the only State-managed railways were the North-Western, the Eastern Bengal, and the now defunct Oudh and Rohilkhand, the officers of the Superior Services were borne on a common roster, and the arrangement worked fairly well, although the transfers of officers between even these three lines gave rise at times to a certain amount of administrative inconvenience, and caused the question of effecting a separation of *cadres* to be brought up for consideration 17 years ago. Nothing, however, was done about it at that time, owing to the intervention of the War; but when the East Indian, the Great Indian Peninsula, and the Burma Railways were transferred to State management the problem became much more acute, since if the existing arrangements were to be maintained, the officers of these three railways would have to be fitted into the common roster, —which would be a highly complex task in itself and might well lead to discontent. To keep these particular officers on three separate rosters might have been possible, but the arrangement would remain illogical and inconvenient while the officers of the other State Railways remained on a common roster. Moreover, the amalgamation of the Oudh and Rohilkhand Railway with the East Indian Railway complicated matters greatly, since it was almost impossible to keep the officers of the East Indian Railway on one list and those of the Oudh and Rohilkhand Railway on another list which contained also the officers of the North-Western Railway and the Eastern Bengal Railway. As regards the question of leave and deputation reserves, there was in the past no deputation reserve in the *cadres* of individual railways, and leave reserves were either not provided at all or the provision made was so inadequate that in practice it was often impossible to work on existing *cadres* without sanctioning temporary excesses. This state of affairs proved very unsatisfactory, since unless railway administrations have a reserve of trained officers available to take the place of officers going on leave or deputation, efficiency of management is difficult to maintain. The question of the abolition of the Provincial Engineering Service and the Local Traffic Service also needs some explanation. These Services were created in 1921 on the State-managed Railways on the lines of the then newly-constituted Provincial Engineering Service of the

Public Works Department. The system however was not adopted by the Great Indian Peninsula Company nor by the East Indian Railway except in so far as the Traffic Department was concerned. The scale of pay fixed for these Services was Rs. 250—20—750 *per mensem*, and they were filled partly by promotion of subordinates but mainly by direct recruitment. Members of them were eligible for promotion to the Superior Services, but only up to 20 per cent. of the number of posts reserved for the branch recruited in India; and the fact that both the Superior Services and the Provincial and Local Services were recruited to a large extent from amongst candidates possessing similar qualifications, but that the latter were paid at a lower rate and had a limited scope of advancement although their duties were practically the same as those of the junior officers of the former, caused considerable discontent, and it was to remove this that the Central Advisory Council finally recommended that these two Services should be abolished. On their abolition being agreed upon in principle, it became necessary to provide for the manning of the posts held by members of them. If the posts had all been brought on the junior scale of the Superior Services,—which, at the time, would also be automatically added to by the provision of leave and deputation reserves, the number of these posts would have been increased so much as to cause serious delay in the promotion of officers to the senior scale. It was accordingly decided to constitute a Lower Gazetted Service to which might be relegated the working posts of minor importance which are not included in the Superior Services. Its scale of pay is to be Rs. 350—30—800, and since it is intended essentially for specially selected subordinates, with no outside recruitment, it will not be open to the same criticisms as were levelled against the Provincial and Local Services which were mainly filled by outside recruitment. Substantial progress towards putting all these changes into effect was made during the year under review. A revised *cadre* for each railway was introduced as from the 1st of March 1931, which provides *inter alia* for a leave and deputation reserve of 20 per cent. of the working posts in the Superior Services, for the abolition of the Provincial and Local Services, and for the creation of a Lower Gazetted Service. It only now remains to draw up a separate roster and seniority list for the officers of each railway, and this it is expected will be done during the course of the year 1931-32. It should perhaps be explained that this last change will not apply

to posts such as that of Head of a Department, for which the claims of suitable officers from all railways must be taken into account when promotions are under consideration.

The importance of the railways in the life of the country and the wide scope of employment that they offer naturally makes the "Indianization" of the railway services a matter which arouses great public interest. The personnel of the lower and subordinate ranks is of course predominantly Indian in any case, and the question over which the country is now exercised is the Indianization of the superior or gazetted ranks of the Services. This process has been greatly accelerated within recent years, and in 1925, as a result of the recommendations of the Lee Commission, the Government adopted the policy of endeavouring to recruit Indians to the extent of 75 per cent. of the total number of vacancies in the Railway Department as a whole, provided suitable candidates with requisite qualifications were forthcoming. The recruitment made each year is shown in the annual reports issued by the Railway Board. The percentage of officers of Indian domicile recruited for the superior Services of the State-managed Railways during 1930-31, including promotions from the subordinate Services, was 75·5. On analyzing the total figures relating to recruitment for 1930-31 by various departments it is found that the percentage of Indians appointed to the Superior Services in the Engineering Branch was 84·6, in the transportation (Traffic) and Commercial Departments 77·8, in the Mechanical Engineering and Transportation (Power) Departments 75, in the Stores Department 100 and in other departments 50. Experience has shown that except for the Mechanical Engineering and Transportation (Power) Departments there is at present no difficulty in obtaining Indian recruits with the requisite qualifications. To meet the shortage in these particular departments a scheme for the training of "special apprentices" has been in force since 1926, the period of training being 6 years, 4 of which are spent in India and 2 in England. This scheme however cannot in the nature of things provide fully qualified officers until the beginning of 1933. Meanwhile in order to accelerate the Indianization of these departments it was decided in June 1929 to invite applications both in India and in the United Kingdom to fill 8 vacancies for which the qualifying standard had been lowered and the age limit relaxed, in the hope that Indian candidates might be forthcoming in the open market who would be

likely to develop into efficient officers. In this way 7 recruits were obtained. Five Indians have been similarly recruited during 1930-31, 2 through the High Commissioner for India and 3 through the Public Service Commission, and it is proposed to maintain these arrangements until 1933 when qualified officers will become available under the "special apprentices" scheme. Moreover while the shortage of Indian recruits for these particular branches of the services persists, it is the intention of the Government to obtain if possible a proportionately larger number of Indian recruits for the other branches, in order that the general policy of obtaining no more than 25 per cent. of European recruits for the Superior Services as a whole may be fulfilled. As regards the Company-managed railways, the process of Indianization has hitherto been somewhat slower. When the Lee Concessions were sanctioned, the Companies agreed to fall in line with the policy of Government, but with the exception of the South Indian Railway they have not yet been able to advance Indian recruitment up to 75 per cent. of the total vacancies, though they were reminded of their obligation in the matter during the year under review. Of the total number of officers appointed to the Superior Services in Company-managed Railways in 1930-31, 61·5 per cent. were Indians, the corresponding figure for 1929-30 having been 59·7 per cent.

Considering the difficult conditions that prevailed, the railways were remarkably free from labour troubles during the year. At the opening of our period the strike on the Great Indian Peninsula Railway which had started early in February 1930 was practically at an end, though normal working was not completely resumed until the 21st of April. The only other dispute during 1930-31 occurred in the locomotive workshops of the East Indian Railway at Lucknow, and was of short duration. The men ceased work in the afternoon of the 18th of June, owing to a misunderstanding of the procedure in connection with the introduction of new rules governing leave. Certain other minor grievances were also presented and were investigated by the authorities; and on the afternoon of the 23rd of June normal working had been fully resumed.

We may conclude our account of railway matters by a brief description of the more serious accidents that occurred during the year. These amounted to nine, as against six in 1929-30; but as

no less than five of them were due to the activities of train-wreckers, the figures for the year, from the point of view of normal railway administration, may be considered to have been satisfactory. On the 25th of May 1930, a parcels express running between Maitha and Bhanpur on the East Indian Railway was derailed, and some damage was caused to the rolling stock and permanent way. Examination of the track showed that the fishplates and nuts and bolts had been removed and one of the rails turned over on its side. On the 26th of May, while an express train was proceeding between Sahebpur Kamal and Lakhminia on the Katihar-Cawnpore section of the Bengal and North-Western Railway, it encountered a severe cyclonic storm. The driver applied the brakes, but before the train could be brought to a standstill the force of the storm derailed it, and all vehicles, except one bogie, overturned. One passenger and the engine *khalassi* were killed, and four passengers, the driver, the fireman and the assistant guard were injured. The total damage to rolling stock amounted to Rs. 21,500. On the 10th of June a mixed train, while proceeding from Sonason to Himatnagar on the Ahmedabad-Prantij Branch of the metre-gauge section of the Bombay, Baroda and Central India Railway, was struck by a severe storm. The last nine vehicles of the train, which were all bogie passenger vehicles, were blown from the track and overturned. Twenty-four passengers were injured, of whom one died subsequently. The damage to rolling stock amounted to Rs. 1,800. On the 24th of July all the vehicles except the engine of a passenger train were derailed between Narayanpeth and Yadgiri on the Poona-Raichur section of the Great Indian Peninsula Railway. Two railway servants and three passengers were slightly injured. The derailment was due to the fact that some wooden keys had been removed from the track and an obstruction placed on the rails. The estimated cost of the damage done to the permanent way was Rs. 1,584, and to the rolling stock and locomotive Rs. 2,000. On the 15th of September a mixed train while running between Ywadaw and Pyinmana on the main line between Rangoon and Mandalay on the Burma Railways ran into a breach caused by heavy rain which had just fallen. The engine and tender, ten goods wagons, one bogie touring saloon and one bogie brake were derailed. One servant in the saloon was killed and three injured. The approximate damage to the rolling stock amounted to Rs. 30,000 and to the permanent way Rs. 1,000. On

the 17th of September a goods train was derailed between Karchana and Bheerpur on the Moghalserai-Allahabad section of the East Indian Railway. The engine was overturned and the twelve leading wagons derailed. The driver, guard and first fireman sustained injuries. The derailment was due to one rail having been completely removed from its position on the sleepers and laid at the side of the track. The damage to rolling stock and to the engine was estimated at Rs. 13,000 and to the permanent way about Rs. 500. On the 17th of September the Dacca mail was entirely derailed between Banpur and Darsana on the Ranaghat-Poradah section of the Eastern Bengal Railway. Four persons were killed and fifty-six injured. The derailment was due to a rail having been stripped of its fastenings, the bolts, nuts and fishplates being found loose and undamaged opposite the ends of the rails. The damage to rolling stock was estimated at about Rs. 55,000 and to the permanent way at Rs. 3,000. On the 28th of October a mail train was derailed between Sibintha and Nyaungchidauk on the Rangoon-Mandalay main line of the Burma Railways. The leading 4-wheeled luggage van, bogie brake and seven passenger bogie vehicles left the track, four vehicles being capsized. The accident was due to the removal of a joint and 12 spikes in a short rail length. Two passengers were killed and seven injured, of whom one subsequently died. The approximate damage to rolling stock was Rs. 65,000 and to the permanent way Rs. 400. On the 15th of November a motor omnibus broke through the closed gates at a level crossing between Nasrala and Shamchaurasi on the Jullunder Cantonment-Hoshiarpur branch line of the North-Western Railway, and was run into by a mixed train which was approaching at the time. The omnibus was wrecked and two vehicles of the train were damaged. Two passengers in the omnibus were killed and three injured.

We have now devoted as much space as we may to describing the country's railways, and the reader, it is hoped, has been enabled to gain some idea not only of the difficulty and interest of the many administrative, technical, and financial problems that have arisen in the course of their development, but also of their great importance as instruments of social change. Nevertheless it must have been obvious,—from such facts as we have given concerning the comparative railway mileage of this country and the United

Kingdom,—that throughout the vast tracts of India which inevitably remain outside the reach of railways, the provision of proper facilities for road transport must always be of the utmost importance for the inhabitants. Even during the second half of the XIX century, when railway development was in its most formative phase and the internal combustion engine had not been thought of, it was generally recognized that a system of well-kept and well-constructed roads was essential for the country's economic and cultural progress, and that those which existed left much to be desired. And now that the possibilities of motor transport are more generally understood, questions connected with the roads of India attract an increasing amount of public attention every year. The full implications of the social and economic revolution initiated in Europe and America by the intensive development of motor transport during the last quarter of a century cannot yet be clearly foreseen; but it is already certain that the Motor Age is likely to have an even more profound effect upon the lives and habits of ordinary people than the Railway Age did before it,—owing to the greater range and mobility of the new method of transport. In this country, the revolution has only just begun, but is already bringing about a great transformation in rural India, not only by enabling the ryot to keep in closer personal touch with the price-fluctuations in his market and thus to dispose of his produce to better advantage, but also by widening his range of interests and bringing him more in contact with the social and political developments of the rest of the country.

The comparative backwardness of road transport in India should not be without its advantages, if it enables some of the unfortunate consequences which have attended its rapid development elsewhere to be avoided. For example, attention was drawn in the report of the Royal Commission on Agriculture, which was published in 1928, to the wasteful competition which was then taking place in European countries between rail and motor transport, and it was urged that in India, the development of railways and roads should be regarded as complementary to one another. If co-ordination can be achieved on these lines it will have many obvious benefits, such as rendering it possible for the railway authorities to proceed with the construction of branch lines which otherwise they might hesitate to embark upon.

Under the Montagu-Chelmsford Reforms the construction and maintenance of roads was made a provincial subject, and,—except in Assam,—was "transferred"; and even prior to 1920, the provincial Governments and local bodies,—rather than the Central Government,—had been principally responsible for them. In detail, the arrangements made by the different Provinces naturally vary somewhat. In some the more important roads are mostly under the charge of the provincial Public Works Departments, whilst in others, the bulk of the responsibility now devolves upon the District Boards or equivalent local bodies, assisted by grants from the provincial revenues. Generally speaking,—as one would expect,—the provincial Governments themselves maintain direct control over the larger, or trunk roads, and the local bodies take charge of the small "feeder" roads,—although the ultimate responsibility in either case lies with the provincial Government. Of recent years, however, there has been a new development, which has referred matters back to the Central Government again, since it is realized that, owing to the increase in motor transport, the maintenance and construction of the most important roads is now becoming a matter of national or "All-India" concern, which the provincial Governments have not the financial capacity to deal with unaided.

To this topic we shall revert again in a moment. But first the main features of India's road system must be briefly described. There exist four great trunk roads, stretching diagonally across the country, which form the framework with which most of the important subsidiary roads are linked. These trunk roads have been in existence for an immense period and are rich in historical association. The most famous is the ancient marching route,—known as the Grand Trunk Road,—which stretches right across the Northern part of the country from the Khyber to Calcutta; the other three connect Calcutta with Madras, Madras with Bombay, and Bombay with Delhi, and the four of them together account for about 5,000 out of the 60,000 miles of metalled road in British India. None of these roads however can be considered safe "all-weather" trunk roads according to modern standards. The Madras-Calcutta road in particular is far from being bridged throughout its entire length, and its improvement even in the Madras Presidency would be likely to absorb a large proportion of the Road Development Fund for some years to come; whilst



A COUNTRY ROAD NEAR OOTY.

further North, where it enters Orissa, it has to cross so many large waterways that it will be quite impossible to make it a complete trunk road in the modern sense within any predictable period. And even the other three roads require a great deal of improvement; on the Grand Trunk Road from Calcutta to the North-West Frontier, for example, there is as yet no bridge over the river Sone in Bihar, and on all of them there are places where floods are liable to cause serious interruption to traffic. As regards the subsidiary roads, the best and most numerous are to be found in Southern India. As one would expect, the worst served regions are Rajputana, Sind, and parts of the Punjab on the one hand, and Orissa and Bengal on the other, the former owing to its aridity and sparse population, and the latter because of the numerous unbridged and mostly unbridgeable waterways which dissect it; in addition of course there are numerous other parts of the country, such as the lower Himalayas, where the difficulties of the ground provide obvious reason for the dearth of communications. Besides surfaced roads, there is a very large mileage of "*kachha*" road in India, some of which provides quite good going for motor traffic during the dry weather. On the whole, however, it would be reasonable to say that India's road system, even before the advent of motor transport, was altogether insufficient for her needs; and it was the increasing realization of this fact that led to the appointment of the special Road Development Committee, whose functions and activities were described in our Report for the year 1928-29.

The recommendations put forward in the Committee's report were carefully considered by the Government of India, whose conclusions upon them were embodied in a resolution which was submitted to the Legislature during the 1930 Delhi Session and passed. The first clause of the resolution provided that the increase from 4 to 6 annas per gallon in the import and excise duties on motor spirit, which had been effected in March 1929, should be maintained for a period of five years in the first instance, and that the proceeds of the additional duty should be allotted as a block grant for expenditure on road development, and credited to a separate Road Development Account, whose unexpended balances should not lapse at the end of the financial year. It was also provided that after 10 per cent. of the grant had been retained by the Government of India as a reserve for administrative expenses, research, and

special grants, the remainder should be apportioned among the Governors' Provinces in the ratio which the petrol consumption in each Province bore to the total consumption in India during the previous calendar year; and that the balance, representing the consumption of petrol in minor administrations and Indian States, should be allotted as a lump sum to the Government of India. A further provision was that a Standing Committee for Roads should be constituted every year to consider the annual budget of the Road Development Account, and to advise the Government on all questions relating to roads,—and road traffic,—particularly on the action to be taken by the Government on the proceedings of the Road Conferences.

The majority of these provisions have now been put into effect. Road Conferences are being held from time to time, the Standing Committee for Roads has been established, and the Road Development Account is being administered by the Governor-General in Council in accordance with the Committee's advice. When the two-anna surcharge on petrol was imposed either at source or port of entry in March 1929, there were considerable stocks of petrol in the country upon which the tax had already been paid at the lower rate, but which were sold at the enhanced price; and the difference between the old and new sale prices in respect of these stocks, which amounted to Rs. 9,38,876, was voluntarily surrendered by the oil companies and paid into the Road Development Account, which thus had a satisfactory reserve to its credit at the outset. By the end of the year 1930 two distributions from the Account had been made to provincial Governments for expenditure upon schemes approved by the Committee; the first covered the 13 months ending on the 31st of March 1930, and the second the following 6 months. Subsequent distributions, it has been decided, will be made twice each year, so that when expenditure is speeded up by the provincial Governments and minor administrations responsible for initiating it, there may be no serious delay in providing funds to meet it. The actual state of the Account, at the end of March 1931, was as follows:—

	Rs.
Revenue up to 31st March 1930	1,02,37,883
Revenue up to 30th September 1930, being the first six months of the year 1930-31 . .	54,47,146
	1,56,85,029

	Rs.
Deduct 10 per cent. reserve with the Government of India	15,68,503
Balance available for distribution	1,41,16,526
Amount actually distributed to date (of this actually Rs. 15·20 lakhs, being the block grant for minor administrations and States, is still in the hands of the Government of India)	1,26,90,000
Balance in hand as margin to cover possible errors in petrol consumption figures which are under revision	14,26,526
The position of the reserve is:—	
10 per cent. of receipts as above	15,68,503
Add contribution from oil companies in respect of tax collected on petrol in process of distribution on the 1st March 1929 . . .	9,38,876
	25,07,379
Deduct budget for Road Engineer's office for 1930-31	54,600
Balance in hand	24,52,779

The statement which now follows, and which covered the period ending on the 31st of December 1930; shows in lakhs of rupees the amounts that had been then distributed, the estimated expenditure on schemes approved by the Governor-General in Council on the advice of the Committee, and the expenditure that had been incurred up to that date:—

	Distribution.	Schemes approved.	Expenditure, to 31st December 1930.
Assam . .	2·50	1·80	...
Bengal . .	19·30	53·95	0·82
Bihar and Orissa	4·30	40·00	...
Bombay . .	25·60	59·59*	...
Burma . .	17·20	... †	...
Central Provinces	4·50	16·70	...
Madras . .	19·40	16·36	5·86
Punjab . .	11·80	57·17	0·16
United Provinces	7·00	42·93	...
Minor Administrations and States . . .	15·20	...	...
	126·90		

* Excluding Rs. 3 crores, representing estimates for Sind.

† Under the terms of the Assembly Resolution of the 4th of February 1930, the road schemes of Burma are not subject to the approval of the Government of India.

It will be observed that the approved programmes of expenditure of many provincial Governments are such as to absorb their revenues in the Road Development Account for many years to come. It will also be noticed that, although the two-anna tax was imposed on the 1st of March 1929 and the Standing Committee had been fully established by the following April, there had been little actual expenditure by the end of the year. This was due to the delays which usually arise in the passage of supplementary demands and the sanctioning of detailed estimates in the provincial Legislatures, and at the time of writing it appears that more progress with new works is now being made. The expenditure of provincial Governments during the first three months of 1931 has been as follows:—Assam, Rs. 85,778; Bengal, Rs. 3,58,209; Bihar and Orissa, Rs. 7,994; Bombay, Rs. 2,77,706; Madras, Rs. 6,45,212; the Punjab, Rs. 87,318; and minor administrations and States, *nil*. The expenditure of Burma, the Central Provinces, and the United Provinces was not reported. An additional cause of delay in the case of minor administrations and States, and one which has rendered it necessary to make distributions to local Governments of approximate sums liable to adjustment later, has been the fact that owing to the many units of which India as a whole is composed, and to their interlaced boundaries, the oil companies have been unable to furnish complete or final figures for the petrol consumed during the last two years in every one of the units. Steps are being taken to secure the information in the future, and, with regard to recent years,—upon whose consumption-figures the distribution of the earlier revenue in the road development account has to be based,—an elaborate analysis of sales has had to be undertaken. Pending this, while distribution has been possible "on account" to the larger units, such as the Governors' Provinces, for the others even approximate figures could not be arrived at during the year, though an *interim* distribution was made to them, also, early in 1931-32.

The reserve with the Government of India at the close of the year 1930-31, was,—as appears from the table on page 269,—practically intact. It is to be applied to grants-in-aid for research and experiment and for special works. Proposals in the case of the former were being received during the year and were under consideration; in the case of the latter it will be readily understood that the selection of projects by local Governments, adminis-

trations, and States, and their consideration and gradation in order of All-India preference, is a matter of some difficulty. In view of the fact that many of the works eventually selected will probably take two or three years to construct, the intention is generally to prepare one programme of works to be financed from this reserve during the whole five-year period. This programme is being compiled and will be considered during 1931-32 when the Road Conference meets.

Among other matters of interest that occurred in connection with roads it may be mentioned that, at its meeting in April 1930, the Road Conference decided to examine the possibility of establishing uniform motor vehicle regulations for all India, and, where provincial taxation is imposed on motor vehicles, to devise a uniform basis for it. In Great Britain, of course, it is based on horse-power. In one or two Provinces in India the basis, so far as private vehicles are concerned, is seating capacity; but there is a body of opinion which favours taking the underladen weight as the basis. As the Road Conference is usually convened only once a year, further discussion of these matters could not be undertaken until after the period now under review.

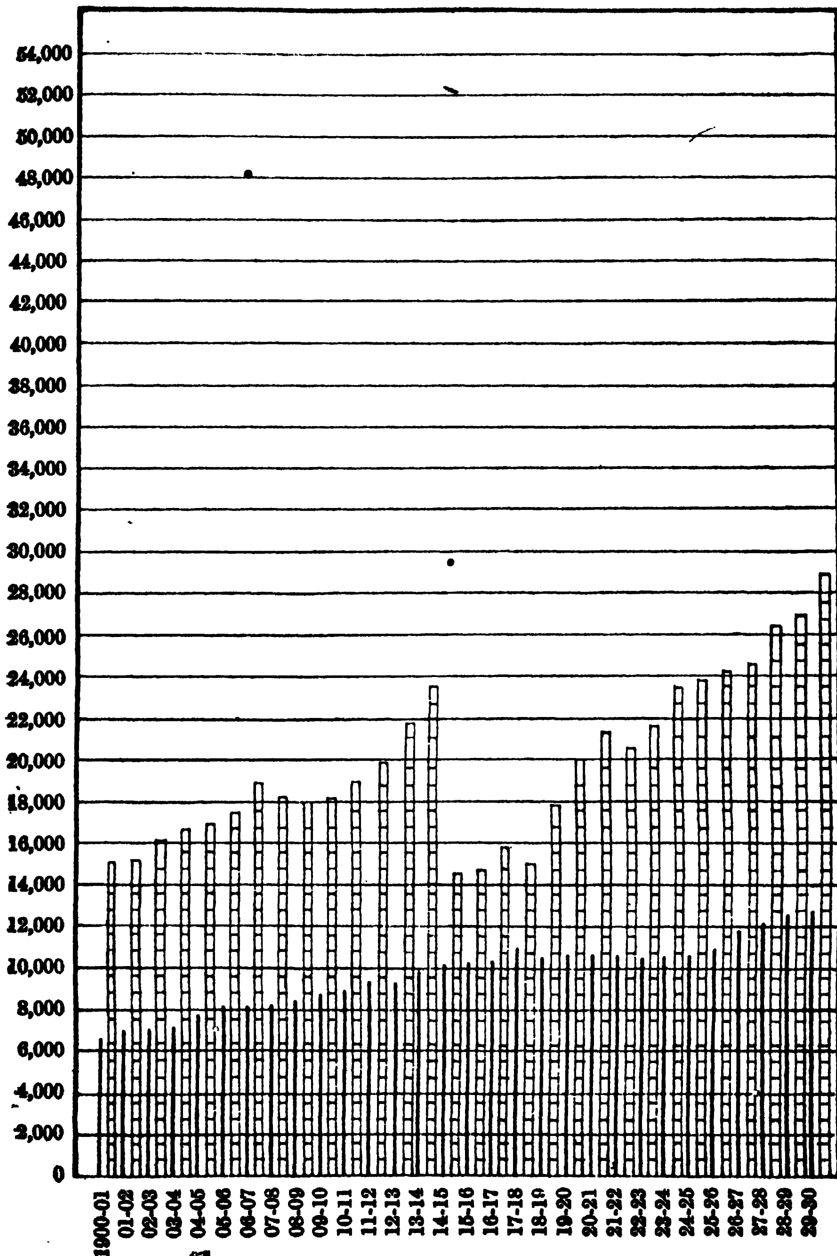
Enough has now been said to indicate the profound effect which the development of railways and roads is having upon the lives of the people of this country. At least equally important, owing to the intimate and numerous services it performs, is the system of Posts and Telegraphs. At the outset, the vast size of India, its climatic diversities and ferocities, its innumerable human differences,—resulting in confusion both of tongues and scripts,—and the profound ignorance and illiteracy of the great majority of its enormous population, combined to present the pioneers of postal administration 80 years ago with a problem of exceptional magnitude. But that these numerous and peculiar difficulties have been in large measure successfully overcome will be sufficiently clear from the facts that follow.

First let us give a few figures to indicate the size and recent development of the organization. The total number of post offices in India during the official year 1929-30 was 23,888, as against 22,820 in the previous year and 12,397 in 1900. The number of articles handled by the Department,—exclusive of money orders,— was 1,392 millions, consisting of 575 million letters, 586 million postcards, 93 million registered newspapers, 120 million packets,

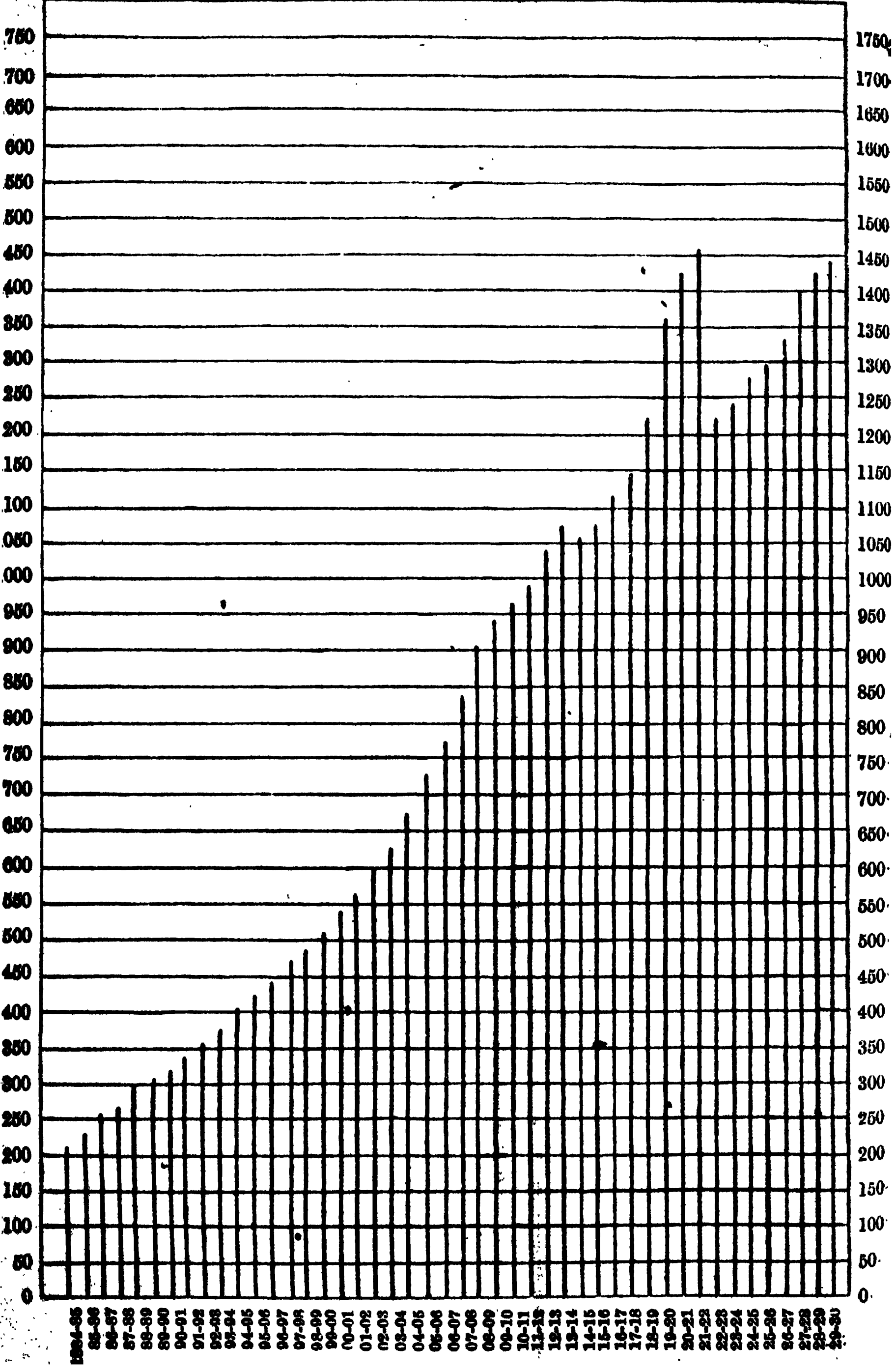
and 18 million parcels, whereas in the previous year the total number of articles dealt with was 1,386 millions, and in the first year of the century 509 millions. In addition, over 40½ million money orders were issued during 1929-30. Of the enormous number of postal articles received, no less than 99·95 were safely delivered, and failure to deliver the remainder was largely due to inadequate or non-existent addressing. The total mileage over which these articles were conveyed amounted to 168,114, a great deal of which of course lay through wild and desolate country in which the mails were exposed to many natural dangers. Some indication of the scope of the Department's activities can also be gathered from the fact that its total gross receipts during the year amounted to Rs. 11·29 crores (as against Rs. 11·03 crores in the previous year and Rs. 3 crores in 1900) and that the number of officials in its employment was 131,917 as compared with 129,902 and 61,750.

But the most interesting feature of postal operations in India is not so much their magnitude,—which although impressive in itself, is nothing to what it might be,—as their variety. To appreciate this we must transport ourselves in imagination away from the towns and the industrialized portions of the country,—where conditions closely resemble those to which European readers are accustomed,—and visit the country districts in which nearly 90 per cent. of the population resides and in which the truly characteristic life of India is to be found. Here the village postman is a figure of immense importance. Besides performing his obvious function of clearing letter boxes, delivering correspondence, dealing with money orders, and suchlike, he undertakes many other activities quite outside the scope of ordinary postal work. In fact he is not so much a postal official as a perambulating public utility agent, often taking several days to get round his beat, and forming the chief link between the rural populace and the outside world. Amongst the activities undertaken by postal officials on behalf of the Government in country districts is the payment of pensions, the collection of salt revenue, and of customs charges on dutiable articles coming into India by post, the arrangement of life insurance for Government employees, and the sale of quinine. By means of the Cash on Delivery System the Department enables the rural population to do its shopping despite its remoteness from towns; it provides banking facilities through the

Number of Post Office Savings Banks, and average balance in each Bank since 1900.



Growth of Postal Traffic since 1884-85—All Articles.



Post Office Savings Bank; and it is the custodian of the postal and telegraphic stores which are kept in reserve against military mobilization. Thus the Department performs indispensable services as the agent of the Government in numerous detailed matters, and the influence it wields as an instrument of civilization in districts otherwise remote from it, is certainly great.

The confidence which the general public reposes in the Department is well demonstrated by the wide and increasing use which is made of its Savings Bank. And not only has the total amount of the deposits risen substantially, but there has been an even more suggestive advance in the average balance at the credit of each depositor. This should give the economist and political philosopher food for thought; since were there truth in the assertions now so frequently made that the inhabitants of the country have become poorer under the existing administration, and that they have now lost trust in it, one would hardly expect that the average individual deposits would have grown from Rs. 122·77 in 1900 to Rs. 170·67 in 1928-29, and would only have declined by Rs. 9·57 during 1929-30 despite the onset of acute economic depression.

Let us turn now to consider the actual working of the Department during the latest period for which detailed information is available. Owing to the length of time which certain figures necessarily take to accumulate, full particulars for 1930-31 are not yet ready, and a large part of our description must therefore, as the reader has probably inferred from the preceding paragraphs, relate to the year 1929-30; but as the corresponding portions of our previous Report referred to 1928-29, these sections will nevertheless be new.

As is shown in the diagram opposite, the expansion which has recently been taking place in the Department's activities continued during 1929-30, although (as might be expected from the circumstances) at a decelerated rate. The number of postal articles handled was as much as 6 millions greater than during the previous year; the staff was increased by 2,098, and the number of permanent post offices by 1,068. A feature of the Department's policy between 1925 and 1930 was the vigorous extension of postal and telegraphic facilities in rural areas, in close resemblance to the policy of rural expansion adopted at about the same time by the Railway Board,—which has already been described. In neither case was the immediate object the acquisition of new revenue, though ultimately of

course it is hoped and believed that these developments will prove fully remunerative. But hitherto they have been as much philanthropic as commercial ventures, being primarily designed to introduce the benefits of modern means of communication into the more backward parts of India, and to enable their inhabitants to be brought into closer contact with the economic and cultural tendencies of the rest of the world. So far as the Posts and Telegraphs Department is concerned it proved possible to make some further progress with this policy in 1929-30, although owing to the financial stringency the number of new experimental post offices opene compared very unfavourably with that for the previous year, be only 289 as against 1,466. Considerable improvement however effected in the transport of mails. One of the characteristic fea tures of mail transport in India, owing to the vast areas of difficult country which have to be covered, is the use of "runners". In 1929-30, 14,813 of these men were in service over beats whose aggregate length totalled 87,919 miles, and the very high percentage of mails that were safely delivered is sufficient testimony to their efficiency. Nevertheless, since this method of transport is obviously primitive, and exposed to many dangers from storms and floods, wild beasts and human malefactors, every opportunity has been taken to extend and improve the already well-organized ra and motor mail services. As regards the former, the chief e of the last two years has been the administrative re-organizat whereby control has been transferred from the former railway ma service "Circles" to the Postmasters General, who now have direct charge of all the activities of their departments except wireless. This concentration of power in the hands of one officer has already proved advantageous in a variety of ways. The motor mail services have also been steadily improved in recent years, their total mileage having been increased from 10,843 in 1927-28 to 13,033 in the next year and to 15,074 in 1929-30. A considerable improvement has also been effected in the facilities for despatching telegrams from rural areas, the total number of village postmen who are authorized to deal with them having been 2,306 in 1929-30 as compared with 1,465 in the previous year.

Among the events which occurred in the subsequent year, 1930-31, in connection with the postal side of the Department's work, the following are of sufficient interest to deserve mention. A gratifying increase occurred during the year in the amount of air mail

carried. At the end of March 1930 the weight of air mails carried from Karachi to Croydon was 504 lbs. and from Croydon to Karachi, 647 lbs.; from Delhi to Karachi, 31 lbs., and from Karachi to Delhi, 71 lbs. At the end of March 1931 the former traffic had risen to 682 and 809 lbs. and the latter to 48 lbs. and 105 lbs. Incidentally it may be mentioned that arrangements were made during the year for accepting inland telegrams for transmission by telegraph to Karachi and thence by air mail onwards,—a facility which is of real value to those who reside in parts of India remote from Karachi. Another useful development in connection with postal traffic during the year was the establishment of a system of express delivery for unregistered letters and postcards, whereby on payment of an extra postage of 2 annas, letters and postcards are delivered like telegrams by telegraph messengers at the post-town of delivery An interesting piece of work undertaken during the year was that of re-arranging the valuable collection of stamps which the Department owns. The task was entrusted to Mr. Smythies, a Conservator of Forests in the United Provinces and a well-known and enthusiastic philatelist. The estimated expenditure for the work during the years 1930-31 and 1931-32 was Rs. 8,000, but by the end of the year Mr. Smythies was able out of the superfluous stock of the Department to market over Rs. 12,000 worth of stamps, and the work had therefore more than paid for itself. During the year the Government of India sanctioned the proposal of the Director General of the Department to issue a set of stamps in commemoration of the Inauguration Ceremonies at New Delhi. The issue was released on the 9th February 1931, and attracted immediate attention, considerable numbers of stamps being sold on the first day.

One point requires to be borne in mind in connection with postal activities in India, and that is their vast potentialities for expansion. In spite of the fact that the number of letters and postcards handled annually is well over a thousand millions, this only represents, in relation to the total population of the country, the despatch of 4·48 such articles per head per annum. If by a perhaps somewhat optimistic stretch of the imagination we can invisage an India, some decades hence, in which really substantial progress has been made towards the removal of illiteracy and penury, the present dimensions of the Department's activities appear as a mere embryo of what they

might become. If no more than 70 per cent. of the population were literate, the Indian Posts and Telegraphs Department might well become the largest in the world.

Apart from the Department's purely postal activities there are also its telegraph, telephone, and wireless services to be considered. At the end of our period the total number of telegraph offices in India was 10,364; and the total mileage of wire, including conductors, connecting these offices, and also the 291 Central Telephone Exchanges in existence, was 563,446,—the actual mileage of lines being 104,312. The great problem of telegraphic communication in India is how to maintain the vast length of overhead wire in good condition, owing to the lonely and difficult country through which it often runs and the variety of climatic and other natural interferences to which it is exposed; and efficient working is only achieved by means of incessant and highly organized patrolling. The extension of the Department's telegraphic undertakings in recent years is indicated by the fact that whereas in 1900 the total number of telegraphic messages dealt with was 6,237,301, in 1929-30 it amounted,—exclusive of course of wireless messages,—to 19,476,184. The most notable event of the year 1930-31, in so far as telegraphs are concerned, was the closing on the 1st of March 1931 of the overland route to Europe by the Indo-European Telegraph Department's and Company's lines. On the abolition of that Department, the offices and lines belonging to it in Birtish India were transferred to the Indian Posts and Telegraphs Department. Among other occurrences of interest were the extension of the daily letter telegram service to the Hedjaz and of the week-end letter telegram service to Canada, Newfoundland, and the United States of America. Considerable progress was made during the year with the installation of a carrier current system between Bombay and Calcutta, whereby those cities will be linked by four extra telegraph channels.

In recent years the dearth of telephonic communications in India has begun to arouse some criticism, and there is no doubt that the existing system is capable of great extension and improvement, and that, in relation to the total population of the country, and in comparison with the systems established in Europe and America, the facilities it provides are poor. But besides being subject to all the difficulties to which Indian communications in

general are exposed, it must be remembered that telephony in India is peculiarly handicapped by the immense variety of tongues and accents in use throughout the country. And although improvement is perhaps not as rapid as it might be, it is considerable. In 1900 the Department had 42 exchanges with 500 connections; in 1929-30 the corresponding figures were 291 and 21,810,—the number of exchanges having increased by 3 since 1928-29. And besides the exchanges worked by the Department there are also those run by the licensed Companies. The number of these rose from 22 to 23 during the year, and as they are mostly situated in the larger towns, their connections are proportionately very much more numerous than those of the Department's exchanges, and amounted to 35,091. Considerable development has also taken place recently in connection with the installation of the automatic system,—though no increase actually occurred in the number of automatic exchanges in India during the year under review, which remained the same as during the period covered by our previous Report, namely 28; trunk line facilities were, however, substantially increased during the year, 9 additional trunk circuits having been opened, namely the Jaipur-Sambhar, Hathras-Agra, Muttra-Agra, Cochin-Alleppey, Delhi-Rohtak, Delhi-Bhatinda, Delhi-Hapur, Manzai-Wana and the Sarawaka-Wana lines. Apart from this, the installation of the carrier current system between Bombay and Calcutta, which we have already mentioned in connection with the developments in telegraphic facilities during the year, has also enabled a direct telephonic link to be established between these two cities. Previously, telephonic communications between Bombay and Calcutta could only be passed *viâ* Delhi, over lines on which many exchanges also operate. Among other developments in connection with the telephone system during 1930-31 were the establishment of a " particular person " call service, whereby a subscriber wishing to make a trunk call is enabled to call up at the other station the particular individual with whom he wishes to talk; and the employment of an officer on a special investigation into the working of the main trunks between Calcutta and Delhi and between Delhi and Bombay, as a result of which it is hoped that substantial improvements in the trunk system as a whole may ultimately be effected. The telephone revenue for the year showed a

satisfactory increase, having risen from Rs. 52,56,138 to Rs. 54,39,142.

In general, however, the financial position of the Department during 1929-30 was again far from satisfactory. Although the total gross receipts were greater by Rs. 26 lakhs than during the preceding year, and amounted, as we have already mentioned, to Rs. 11·29 crores, working expenses rose by no less than Rs. 31 lakhs to Rs. 11·26 crores. After paying interest on capital the Department therefore suffered a loss of Rs. ·62 lakhs, which is Rs. 8 lakhs more than the loss it incurred in 1928-29. It is true that in the past its success has largely been due to the fact that it has been satisfied if receipts covered expenditure by a small margin, and that it has never been considered to be solely a revenue-earning concern. It is also true that the recent increase in working expenses is almost entirely accounted for by attention to the welfare of the staff and improvement in wages, and that the failure of income to overtake the increase in expenditure during 1928-29 and 1929-30 was largely due to depression in trade and political uncertainty. But strenuous endeavours will certainly have to be made during the next few years to re-establish the Department's activities on a remunerative basis; for the financial results for 1930-31, for obvious reasons, are likely to be substantially worse than those for 1929-30. Already the programme for extending postal facilities in rural areas has had to be drastically curtailed,—though since the total number of post offices throughout the country, as a result of this programme, has been increased from 20,333 in March 1925 to 24,370 in March 1931, a temporary suspension of activity may be regarded with comparative equanimity. In addition, strenuous endeavours were made throughout the year to discover every item of expenditure upon the existing establishment which may not be entirely necessary; and the question of effecting permanent retrenchment in the activities of the Department was taken up towards the end of the year. A small committee, it may be mentioned, was appointed in February 1931 to examine the working of the accounting system, in order to see how far it succeeds in presenting a true picture of the commercial aspects of the Department's activities. Apart from the financial anxieties experienced in connection with the Department during the year 1930-31, the administrative difficulties were of course considerable, owing to the unrest which prevailed through-

out the country. It is however gratifying to be able to record that during the worst of the riots and disturbances which took place,—as for example at Peshawar, Chittagong, Dacca, Benares, and Cawnpore,—the conduct of the postal officials was generally speaking admirable, and with hardly an exception they attended office and discharged their duties despite the personal danger to which they were often exposed while doing so; the courage of the engineering staff working in the disturbed area around Peshawar was particularly commendable.

Before concluding our account of the activities of the Posts and Telegraphs Department we must turn our attention for a moment to the subject of wireless. External communications were, as in previous years, satisfactorily maintained by means of the " beam " service which is worked by the Indian Radio Telegraph Company under a licence, and the amount of traffic again increased. So far as internal communications are concerned, no attempt had been made until the period under review, except in the case of the circuit between Madras and Rangoon, to supersede the established telegraphic arrangements by regular wireless transmission,—though some experiments had occasionally been made. A number of short-wave transmitters, however, have been designed and constructed in the Department, and with this apparatus limited services were worked during 1930-31 between Calcutta, Rangoon, and Madras, to assist in the disposal of ordinary telegraph traffic when there was delay by the normal means of communication. Experiments on short-wave communications were made between Madras and Colombo, and plans were devised for conducting extensive experiments in wireless telephony between those places in the following year. The fact also should be recorded that during the visit of H. R. H. Prince Purachatra of Siam to India, temporary arrangements were made for establishing two-way wireless telephony on short-wave between Calcutta and Bangkok, and that Prince Purachatra, H. E. the Governor of Bengal, and various officials at Calcutta, were able to maintain conversation with Bangkok without difficulty.

Considerable improvements were effected during the year in the wireless facilities provided along the international air route across India and Burma. On the line from Karachi to Calcutta, two new stations were erected and the four existing stations were extensively modified, and the wireless arrangements for this section of

the route may now be said to be complete. Apparatus for wireless direction-finding was included at most stations, which are thus enabled to determine the position of aircraft in flight. Designs were drawn up for establishing similar arrangements on the section of the route between Calcutta to Rangoon, and work was started on the construction of four new stations in the Bay of Bengal and on the alteration of the existing station at Rangoon. Wireless services were provided by these stations for the Karachi terminal of the regular air service with the United Kingdom, and the Indian State Air Service between Karachi and Delhi. Special arrangements were also made for various individual long-distance flights which crossed India. In this way some progress was made in developing the practical technique of the wireless service required for air purposes, which requires close co-operation between the meteorological, postal and air authorities.

The development of wireless broadcasting in India has hitherto been disappointing, especially in view of its immense practical and cultural possibilities in a country such as this. During the year under review, however, the two broadcasting stations at Calcutta and Bombay continued to be in use, and the quality of the programmes,—although they cannot yet be compared at all favourably with those in Western countries, showed some improvement. The working of these two stations was taken over by the Government in March 1930, when the Indian Broadcasting Company went into liquidation. It is of course in any case difficult to devise programmes in India which will give general satisfaction, owing to the multiplicity of languages. Nevertheless, it is safe to predict that realization of the immense possibilities of broadcasting as an instrument of culture and entertainment, will in time result in its being used here much more widely and effectively than it is at present.

We now turn to another modern invention whose influence on ordinary existence is already considerable, and is bound to increase greatly,—namely aviation. The rapidity of its development here recently has been very remarkable, and its potential importance, for a country such as India, would be difficult to over-estimate. Even now, it has reduced the effect of her distance from Great Britain by more than half; has put her in a position of exceptional strategic importance in the chain of Imperial communications, besides bringing her into much closer touch with the rest

of the world; and has provided the means whereby her own vast internal distances may be transversed with unprecedented speed.

The great event of the period covered by our previous Report was the inauguration of the regular weekly air mail service between Croydon and Karachi, and of the supplementary service between Karachi and Delhi. While discussing the activities of the Posts and Telegraphs Department we have already mentioned the gratifying increase in the amount of mails carried by the former service, but a few further particulars here will not be out of place. The actual value of the freight transported, if we exclude bullion and specie, was not very great, though the imports were of much greater value than the exports, amounting to Rs. 1,29,382, as against Rs. 4,150; moreover as bullion and specie to the value of Rs. 7,65,876 was also conveyed to India by this route, the total value of the imports reached the substantial figure of Rs. 8,95,258. As regards passengers, the total number transported was 135, of whom 69 travelled on the Eastward journey and 66 on the Westward. The service continued to operate weekly throughout the year, the incoming mail arriving at Karachi either on Saturday afternoon, or (during the latter part of the period) on Sunday afternoon, and the outgoing mail leaving either on Tuesday or Wednesday morning. The service came in for a certain amount of criticism on the ground that it was slower than it need be, but shortly after the close of the period under review it proved possible to accelerate it substantially. The Karachi-Delhi section of the Indian State Air Service was operated regularly throughout the year by machines hired from Imperial Airways Limited, under a charter agreement. The total weight of the mails carried was 5,751 lbs., of which the larger amount, namely 3,640 lbs., was conveyed on the Eastward journey. Passenger traffic was fairly satisfactory,—though it decreased somewhat towards the end of the period,—the total number of passengers carried being 125. Readers of our previous Report will recollect that during 1929-30 negotiations were in progress for extending the activities of the Indian State Air Service Eastwards, and during the period now under review considerable progress was made with a scheme for operating a service from Delhi to Calcutta and Rangoon with small aircraft carrying mails only. Subsequently, however, the Government of India decided to establish a service between Karachi and Calcutta, as a State owned and managed

concern, with larger aeroplanes carrying both passengers and mails; and this change in policy deferred the inauguration of the service. Meanwhile Imperial Airways Limited were given notice of termination of the charter agreement under which they had hitherto operated the Indian State Air Service between Karachi and Delhi, and the arrangement will cease on the 29th of December 1931. It was hoped that the new service between Karachi and Calcutta would be opened on the same date, the intention being that it should subsequently link up with a regular service between Calcutta and Australia, but the necessity for economy has enforced a temporary postponement. Apart from these extensions of Indian or Imperial air services, important developments in connection with foreign services also took place. Permission was given during the year for the operation across India of regular fortnightly air services both by the Dutch Company, the *Koninglijke Luchtvaart Maatschappij*, from Amsterdam to Batavia, and by the French Company, the *Air Union Lignes d'Orient*, from Paris to Saigon. These services carry mails, passengers, and goods to and across India, and are permitted also to embark passengers and goods in India for abroad. The Dutch service, following a series of regular experimental flights, started on the 29th of September 1930, and up to the end of December had completed seven outward and six return flights. The French service began to operate on the 17th of January 1931. The Dutch service is worked by Fokker F. XII aircraft and the French service by Fokker F. VII aircraft.

Good results can again be reported from the Light Aeroplane Clubs at Karachi, Bombay, Delhi, and Calcutta, which were started during 1928-29 with the object of providing Indians with facilities for learning to fly, and also from the new clubs at Lahore and Madras which were established during the period now under review. All six clubs are under the control of a parent club, known as the Aero Club of India and Burma, which received a Government subsidy of Rs. 30,000 for the financial year 1930-31. The four original clubs were each granted a subsidy of Rs. 20,000 for the same year, and in addition a bonus calculated at the rate of Rs. 150 for each pilot trained during the year, subject to a maximum of Rs. 5,000. This constituted the third year of subsidy to these clubs. In addition to the subsidies, each of them has received a grant of Rs. 9,000 towards the construction of a

hangar. As regards the new clubs at Lahore and Madras, these were both provided with two D. H. Gipsy Moths, with spare engines, and received Rs. 20,000 as a subsidy, a bonus calculated at the rate of Rs. 150 for each pilot trained during the year, subject to a maximum of Rs. 2,250, and Rs. 15,000 towards the provision of a hangar. Flying training started on the 31st of May in the club at Lahore and on the 21st of July at Madras. The total number of members trained *ab initio* in all six clubs during the calendar year 1930 was 93, of whom 79 were granted their pilot's 'A' licences. Of these 79, 37 were Indians, and included among them were two ladies, namely Miss Rodabeh Tata and Mrs. Urmila K. Parekh, both of whom were trained by the Bombay Flying Club. One Indian,—Mr. Bhagat Behari Lal,—succeeded in obtaining his 'B' licence, that is, a licence allowing him to fly for hire or reward, at the Delhi Flying Club during the year, and is the first Indian trained in India to have done so. The total number of flying members of all six clubs at the end of December 1930 was 698, of whom 434 were Indians. The rapid increase in Indian flying membership is largely accounted for by the remarkably large enrolment obtained by the new Punjab club during the year, which secured no less than 252 Indians as flying members. Increasing interest in civil aviation, it may be mentioned, is being taken by the Princes and Ruling Chiefs. H. H. the Maharaja of Jodhpur has completed his tests for a pilot's 'A' licence, and has purchased a D. H. Gipsy Moth for his own use. The Raja of Kalsia is also the owner of a D. H. Moth which he pilots himself and is the holder of an 'A' licence. Both are members of the Delhi Flying Club. The number of minor accidents to club aircraft during the year was fairly large,—namely 37,—but there were only two of sufficient seriousness to deserve specific mention. In one case a pilot under training, while flying low over a residential area, in disobedience of the Indian Aircraft Rules, struck an electric standard. The machine was wrecked, but the pilot escaped injury. In the other, a machine, when coming in at dusk to land near one end of an aerodrome, knocked a man off a bullock cart, with, unfortunately, fatal results. Accidents of the first sort can be dealt with by disciplinary measures, but it is only possible to prevent those of the second sort by more rigorous training and the inculcation of "safety first" principles. The arrangements hitherto

made for the investigation of accidents to aircraft in India are, naturally, still in many respects incomplete, but a scheme is under consideration for establishing an organization to improve them.

Through the generosity of Sir Victor Sassoon, Bt., a fund, which H. E. Lord Irwin before his departure agreed should be called the Irwin Fund, was established during the year for the encouragement of flying in India. Sir Victor Sassoon opened the fund with a donation of Rs. 1,00,000, and the sums received will be invested and the income therefrom will be available for use during 1931. The Director of Civil Aviation and the Chairman of the Aero Club of India and Burma have been appointed trustees, and a committee of management has been appointed to consider how the proceeds of the Fund can be most advantageously spent. A further incentive to flying was provided by Rai Gopal Das, a merchant of Lahore, during the year, who presented a shield for competition under conditions to be framed by the Aero Club of India and Burma.

In our last Report mention was made of the offer by H. H. the Aga Khan of a prize of £500 for the first solo flight between England and India or *vice versâ* in not more than one month by a person of Indian nationality. This led to a race between three Indians. The first to start was Mr. Man Mohan Singh, who took off from Croydon on the 8th of April 1930, but could not reach Karachi before the 10th of May, having made a forced landing in a swamp at St. Rambert near Marseilles, which damaged his machine. The second competitor, Mr. Aspy Engineer, left England on the 25th April and arrived at Karachi on the 11th May, a day behind Mr. Man Mohan Singh. The third competitor, Mr. J. R. D. Tata, entered the race on the 3rd of May, from Karachi, and reached Croydon on the 12th. As Mr. Man Mohan Singh had exceeded the time limit of one month laid down as one of the conditions of the competition, the prize was awarded to Mr. Engineer. It may be remarked that Mr. Tata's performance was highly creditable, since although he was too late to win the prize, he completed the flight in the shortest time, namely nine days. During the year under review, H. H. the Aga Khan offered another prize of £500,—this time for the first solo flight made by an Indian from India to Cape Town. Two unsuccessful attempts have so far been made for this

prize. One was by Mr. Aspy Engineer, the winner of the previous prize, who left Karachi in a D. H. Puss Moth on the 30th December 1930, but crashed shortly afterwards in a marsh near Abadan, as a result of which his machine was wrecked and he was compelled to abandon the attempt and return to India. The other attempt was by Mr. Morad, who left Calcutta for Cape Town at about the same date in a D. H. Gipsy Moth but crashed near Shaibah with similar results.

Exclusive of the journeys made by pilots of the Dutch and French air mail services, the number of flights made by non-Indian aviators across India during the year was 22. Of these British nationals were responsible for 11, French for 4, Australian for 3, and American, Dutch, Italian and Portuguese for one each. Among the aviators there were two English ladies,—Miss Amy Johnson and the Hon. Mrs. Victor Bruce,—and one French lady,—Mlle. Marys Hilsz. Miss Johnson flew in a D. H. Gipsy Moth from England to Australia in an attempt to beat Squadron Leader Hinkler's record of 15½ days, and the earlier part of her journey, from England to Karachi, was accomplished in the short time of 6½ days. Mrs. Victor Bruce flew in a Blackburn Bluebird from England to Tokyo and later across America. The flight of Mlle. Marys Hilsz was from France to French Indo-China, which she accomplished successfully. Two other flights are worthy of special remark, one being the record flight from England to Australia in 10 days by Wing Commander (now Air Commodore) Kingsford Smith, in an Avro Avian; the other, the flight by two French airmen,—Capts. Couelette and Lalouette,—who flew from Paris to Saigon in the record time of 5¼ days. One fatal accident has to be reported in connection with these flights. Messrs. Hook and Mathews, while crossing Burma *en route* for Australia, during the monsoon, were forced down by heavy rain and low clouds in the Yoma mountains. The machine was slightly damaged, though the occupants were unhurt; but the task of reaching civilization proved too arduous, and though Mr. Mathews managed to get in touch with villagers, Mr. Hook died of exhaustion. In view of the great difficulty and cost of organizing relief expeditions in cases of this kind, steps have since been taken to discourage individual aviators from attempting the flight over Burma during the monsoon.

A sum of Rs. 14,59,700 was included in the Civil Aviation Budget for 1930-31 for expenditure on ground organization. This amount was spent mainly in completing the route to Rangoon, though minor improvements were also made in the Karachi-Calcutta section. On the Calcutta-Rangoon section progress was made with the preparation of the ground at Chittagong; and the grounds at Sandoway, Bassein, and Mingaladon (Rangoon) were completed. At Mingaladon a hangar was erected, and a supply of water and electric light was provided. The last item upon which expenditure was incurred was the Juhu aerodrome at Bombay, which hitherto has been below the level of flood-water and therefore unusable during the monsoon; accordingly it was decided that the level of the landing ground should be raised by 4½ feet, and this work has now been practically completed. As regards the new Calcutta-Rangoon section of the main air route across India, it may interest readers to have particulars of the mileages between the various landing grounds. These are as follows: Dum Dum (Calcutta) to Chittagong, 228; Chittagong to Akyab, 178; Akyab to Sandoway, 158; Sandoway to Bassein, 120; Bassein to Mingaladon (Rangoon), 101,—the length of the whole route being thus 785 miles. As a result of the work which was accomplished during the year, ground organization facilities now exist for civil aviation throughout India at Karachi, Hyderabad, Uterlai, Jodhpur, Badhal, Delhi, Allahabad, Gaya, Calcutta, Akyab, Sandoway, Bassein, Rangoon, and Bombay; and in addition, of course, the Royal Air Force aerodromes and landing grounds in different parts of the country are available for use by civil aircraft subject to certain conditions. Meteorological and wireless stations have also been established to cover the trans-India route. The total amount which had been spent up to the end of 1930-31 on the establishment of air routes and aerodromes for civil aviation in India was Rs. 41,34,973.* New orders were issued

* This sum was subdivided as follows:—

	Rs.
Acquisition of land	8,30,877
Preparation of sites	13,66,070
Hangars and buildings	7,20,801
Roads	84,846
Wireless stations	10,05,000
Meteorological stations	57,000
Aerodrome equipment	71,379
	41,34,973

during the year, dealing with the examination of pilots and ground engineers and the approval of aerodromes.

Useful aerial photographic and survey work was done during the calendar year 1930 by a commercial company whose head-quarters are at Dum Dum,—known as Indian Air Survey and Transport Limited,—which completed vertical photographs of 4,110 square miles of ground. Of this area, 3,440 square miles were photographed for the purpose of compiling 16" to the mile settlement maps, the scale of the negatives being 6" to the mile; and the rest of the work was undertaken for a variety of purposes, such as irrigation, forest, town-planning, and railway surveys. The Company's programme for settlement surveys is being continued during 1931, and by the beginning of February it had already completed photography of 1,600 square miles in the United Provinces, Bengal and Bihar and Orissa. The total number of flying hours devoted to photographic work was 420. The flying equipment owned by this concern consists of three D. H. 9 aircraft and one Avro Avian. Its drawing office was fully employed throughout the year in preparing maps of different kinds from the photographs,—which include oblique as well as vertical photographs,—taken during the previous season. The Company has also undertaken some useful research with a view to reducing the amount of ground survey work necessary for the complete rectification of vertical photographs used for large scale mapping. As a result, new methods have been introduced and the cost of the ground survey has been reduced by over 25 per cent. Among the other activities of the Company is air-taxi work, and it is estimated that 5,000 passengers were carried during the year, many of whom thereby experienced their first flights.

In connection with the scheme for training Indians in civil aviation in England, which has been described in our last two Reports, the Government of India decided to award the last two scholarships in 1930, and the two scholars who were selected in India proceeded to England in June. The first three scholars to receive training returned to India at the end of 1930, and were given appointments as aerodrome officers, and posted to take charge of the civil aerodromes at Karachi (Drigh Road), New Delhi, and Allahabad (Bamrauli). The total number of scholarships granted under the scheme was nine.

In April 1930 it was decided to appoint a regular representative of India, resident in Europe, to attend all sessions of the International Commission for Air Navigation.

In September 1930, Lt.-Col. Shelmerdine, O.B.E.,—who was Director of Civil Aviation in India until January 1931, when he was succeeded by Mr. F. Tymms, M.C.,—left for England to attend the Imperial Economic Conference as the representative of the Government of India in matters connected with aviation, a subsidiary object of his visit being to select aircraft for the Indian State Air Service. He returned to Delhi in the middle of November, both journeys being completed by air.

At the session held in March, 1931, the Chamber of Princes adopted a summary of principles regarding the regulation of aviation in the Indian States. While emphasizing the fact that the sovereignty of the rulers of the States,—in whatever measure they possess it,—embraces the air space above their territories, the Chamber agreed that the Government of India, in fulfilment of its obligations as a signatory to the International Convention for the Regulation of Aerial Navigation, should regulate air navigation over the Indian States, and that there should be one central authority in India for the issue of licences and certificates in relation to aircraft, personnel and aerodromes. The Chamber also decided that Indian States should enact and enforce legislation on the lines of legislation in British India with regard to navigation of the air; that the notification of prohibited areas in Indian State territory should be made after consultation with the Government of India; that the establishment of aerodromes and landing grounds in Indian State territory may be carried out by the State concerned or, by arrangement, by the Government of India; and that in order to safeguard its fiscal rights each State may designate one or more customs landing grounds for aircraft arriving at or departing from its territory. The general effect of these provisions, it will be seen, is to reserve to the States their rights with regard to Customs, and notification of prohibited areas, while providing for the unified control of aviation in India by means of concerted action between the Government of India and the States.

Closely connected with the growth in the science of aeronautics has been the increased importance of meteorology. Until fairly

recently the Indian Meteorological Department was designed to do no more than provide the public, by means of telegraphed reports, with accurate information concerning rainfall and temperature, and timely warnings of storms. But with the development of aviation many new duties have devolved upon it and have necessitated an almost complete overhaul of its organization. For it is of the utmost importance to aviators that they should have detailed and accurate information not only upon the meteorological occurrences that interest the ordinary public, but also on such matters as the strength and direction of winds at different levels, the height and structure of the clouds, the degree of visibility obtainable and the exact position and movements of such local phenomena as fogs, dust-storms, and thunder-storms.

In order to meet these requirements,—at any rate in so far as the recognized air routes which are now being established across India are concerned,—considerable developments have recently taken place, particularly in Northern and Central India and in Burma, where the Department has had to effect extensive changes in its organization in order to meet the requirements of aviators on the Karachi-Rangoon air-route. A large part of these changes were effected during the two years prior to the period now under review, and were duly described in our Reports; and the last stage,—except in so far as permanent building schemes are concerned,—was reached in 1931, when the arrangements for the Delhi-Calcutta and Calcutta-Rangoon routes were practically completed. Some observatories were raised to "second class status"; others were newly started; and certain special stations in the chain of observatories that has now been created along the air routes were equipped with self-recording instruments. The regional forecasting centres at Calcutta and Rangoon, like those already set up at Karachi and Delhi, began to prepare two weather charts a day,—one for the usual 8 hours observations and the other for the newly introduced 17 hours observations,—the particulars being obtained from the network of second class observatories that have been established throughout the non-peninsular part of the country. A new meteorological office was opened at Rangoon in September 1930 and started functioning as a forecasting centre a little later. Steps were taken for acquiring buildings and property at Dum Dum near Calcutta to house a subsidiary weather service centre there; and provision has also been made for the creation of a

similar centre at Akyab, which will be under the control of the Rangoon office. A few new pilot balloon stations were opened, and before the close of the year about 25 stations out of a total of 31 throughout the country had started regular observations of an afternoon balloon flight in addition to the usual morning flight. This expansion of pilot balloon work caused a great increase in the demand for hydrogen, and special arrangements had to be made at the Agra Observatory to cope with it,—the output of this gas there reaching the record figure of approximately 1,500,000 cubic feet. But the construction of the additional hydrogen plan which is so much needed had unfortunately to be postponed for another year. As a result of the increase of private flying in India the Department on occasion finds itself called upon to help aviators in many new and sometimes unexpected ways; for example, a large number of candidates for pilots' licences now require to be trained in meteorology as a part of their course, and the Department has had to provide facilities at several forecasting centres for having them instructed and examined by local meteorologists.

At various times in recent years the advisability of expanding the daily weather bulletins issued by the Department to shipping at sea, by incorporating in them particulars based on actual observations made at a number of shore stations, has been under consideration; and arguments in favour of this course were expressed during the discussions upon the International Convention for the Safety of Life at Sea of 1929, which is likely to come into force in July 1931. Accordingly, by the end of the period under review, a scheme for supplementing the usual wireless broadcasts for shipping had been drawn up and was being subjected to careful consideration. Meanwhile, throughout the year, the usual warnings for cyclones, storms, depressions, squally weather and heavy rainfall were issued as before from Poona and Calcutta. The increasing demand for meteorological information from aviators was met by the different forecasting centres as promptly and satisfactorily as possible, and the various routine activities, such as the compilation and tabulation of climatological data, the maintenance of seismological and magnetic observations, the determination of time and the issue of time signals, and the publication of weather reports and forecasts, were carried on as in past years.

In the report of the Royal Commission on Agriculture, the suggestion was made that steps should be taken by the Meteorological Department to provide facilities for studying and disseminating information concerning agricultural meteorology, and during the year considerable progress was made in this direction, a detailed scheme having been drawn up in the Department and elaborated in consultation with agricultural experts. The aim is to examine and forecast the local weather and climate, or, as modern workers now call it, the " micro-climate ", of each crop. Steps will be taken in the near future to inaugurate the new school of studies, which will of course require the maintenance of the closest co-operation between meteorological and agricultural experts. A smaller yet interesting development that was sanctioned during the year was the establishment of two scholarships worth Rs. 100 a month for post-graduate students in meteorology, —the scholarships being tenable for one year but renewable for a second year in suitable cases. The scheme is at present a temporary one, and a report is to be made on its working after two years' experience. In addition to these regular scholars, it may be mentioned that officers of the Department undertake, from time to time, to guide post-graduate University students in researches into meteorological problems undertaken for University degree theses; and a few such workers were under training during the year.

As regards the purely scientific side of the Department's work there are also several interesting items to record. Soundings of the free atmosphere by balloons carrying self-recording instruments were made at Poona and Agra, and also at the Nizamiah Observatory at Hyderabad with the co-operation of the Director there, and observations of upper air temperatures and humidities, obtained as a result of ascents of Royal Air Force aeroplanes at Quetta, Peshawar and Karachi, were carefully studied. At Agra some innovations were introduced in the design of the Dines meteorographs, since it was found that the original instrument gives a record which, for short ascents, is too small to be of much practical value; instruments of a new type were therefore evolved with more open scale for temperature and pressure, and by releasing these from " clown " balloons at pre-determined heights it has proved possible to explore the lower layers of the atmosphere very accurately. A new temperature indicator was also designed,

which can be used, when it is let off with hydrogen-filled balloons, to determine four different, successively diminishing temperatures. At Bombay research was done during the year on evaporation, on the electric field of overhead thunder-clouds, on the electricity of monsoon rain and on microseisms in so far as they have bearing upon the prognostication of storms. A variety of subjects were also investigated at Poona, the most interesting being the physical structure of individual storms, night radiation, atmospheric electricity, the sea breeze from the Bombay coast, local thunder-storms, the upper air circulation at cirrus level, and studies in the reliability of different weather factors for use in the forecasting of seasonal rains. At Karachi, temperature investigations on the airship mooring mast were somewhat handicapped by defects which developed in the special instrumental equipment, but ordinary thermographs at various heights were kept working and the data thus collected were subjected to a preliminary analysis. At Kodaikanal the usual research work in solar physics was continued. The collection of data relating to the origin and mechanism of " Nor' Westers " in Bengal and Assam was suspended during the year, except for the maintenance of self-recording instruments at a few stations, but a start was made with the preparation of a preliminary report on these phenomena, based on the results of the investigations previously made. A few memoirs and over a dozen scientific notes were published by the Department during the year, and several members of the staff also contributed papers to scientific journals either in India or abroad.

CHAPTER V.

Commerce.

Among those using this volume who are unfamiliar with the structure of the corresponding portion of our previous Reports, the title of this Chapter may seem, this year, to afford the prospect of some particularly interesting reading. For since commerce was the original cause of the connection between Great Britain and India, and is consequently one of the most fundamentally important subjects with which we have to deal, such readers will look forward to learning exactly how far the gradual decline in Britain's share of the import trade to this country, which has been a conspicuous feature of commercial statistics for a number of years, was accentuated by the exceptionally difficult circumstances which prevailed during 1930-31; and in particular to obtaining precise information concerning the effect which the boycott placed upon British goods during the course of the Civil Disobedience Movement had upon this tendency. They will be anxious, also, to secure detailed facts and figures indicating what effect the peculiar events of the year had on India's own commercial position; for in her case the consequences of the world-wide economic depression, from which she suffered at least as much as most other countries, must obviously have been greatly aggravated by the serious political disturbances to which she was also subjected. We must therefore explain at the outset that owing to the length of time which commercial statistics necessarily take to accumulate, the larger part of this Chapter,—as in previous issues of these Reports,—will be concerned not with the year enumerated on the cover, but with the twelve or fifteen months prior to it. On the other hand we can at least promise this,—that the proportion of relatively up-to-date facts which we are in a position to place before our readers this year is much larger than in any previous occasion.

Although the figures with which we shall be dealing, both in respect of 1930-31 and 1929-30, are certainly depressing, we must endeavour to place them in their proper perspective. Despite the Civil Disobedience Movement, and the world-wide depression in trade which set in six months previously, and despite the fact that the rural masses of this country,—that is to say about 90 per cent.

of the population,—have always been deplorably poverty-stricken, it is nevertheless true that India's commercial strength, although impaired by recent events, is still very great, and is capable, given favourable conditions, of immense development in the future. Only on very rare occasions since organized commerce first began, —as for instance during the exceptionally difficult years 1920-21 and 1921-22,—have India's total exports been less in value than her imports; and during the whole of this period the balance of trade as against Europe has otherwise been consistently and, as a rule, substantially in her favour. Her vast imports of bullion of course are proverbial, and have at times been so extensive as to cause serious monetary embarrassment to other countries, especially owing to her habit of absorbing and immobilizing a large proportion of what she acquires. Moreover the rapidity with which her overseas trade has expanded since the establishment of the British connection has been even more impressive than its magnitude. Accurate figures for years much before the middle of last century are difficult to obtain, but the point is sufficiently brought out by the fact that whereas in 1850-51 the combined value of her exports and imports of merchandise and treasure amounted to Rs. 34 crores, in 1924-25, the record year, it had reached a total of Rs. 758 crores, and even in 1930-31, despite the conditions that prevailed, it amounted to as much as Rs. 430 crores. It is a little difficult to reconcile such facts with the statement frequently made by opponents of the existing administration that India has not prospered under it*.

Let us now proceed to get before the reader such facts concerning the trade results of 1930-31 as are available at the time of writing. The monsoon rains, which broke at about the normal time, were generally satisfactory both in amount and distribution, and produced on the whole excellent harvests. The rice crop, particularly in Burma, the most important rice tract, was unusually good, production there being estimated at 5,073,000 tons as compared with 4,986,000 tons in 1929-30. The wheat crop of

* It should however be noted that the figures for 1850-51 are not strictly comparable with those of 1930-31, for three reasons. Firstly, the area concerned was smaller in the earlier year; secondly, the method of collecting commercial statistics was altered under the Indian Sea Customs Act of 1878; and thirdly, substantial changes in prices occurred between the two years. Nevertheless the increase in the value of the country's overseas trade has undoubtedly been very great.

1930 gave a record yield, amounting to over 10 million tons; and the estimates for the outturn of the new sugarcane crop were also good. Two successive good crops of jute were harvested during the years 1929 and 1930, but cotton gave only a fair outturn in 1929-30 with no brighter prospects for the new crop. A record production of tea was obtained during 1929, amounting to 433 million lbs., and though production was restricted in 1930 the crop was still fairly large, being in the neighbourhood of 390 million lbs. As regards oilseeds the condition of the crops may on the whole be regarded having been as fair to good. From the purely agricultural point of view, therefore, the year 1930 was satisfactory; but unfortunately the benefits which should normally have accrued from this have been entirely off-set by the extreme industrial and trade depression which set in during the autumn of 1929 and became progressively more severe throughout the whole period under review. As a result, the prices obtainable for India's chief staple crops, upon which her whole economic life may be said to depend, have declined so much that profitable markets for a large part of the exportable surplus could not be found. The actual quantities exported did not as a matter of fact show much difference from those of the previous year, and in respect of certain commodities they even improved,—owing to the general superiority of the harvests of 1930-31 over those of 1929-30. But the fall in values was colossal. Between September 1929 and December 1930 the decline in the Indian Index Number of prices for raw cotton, for example, amounted to no less than 52·7 per cent. Raw jute followed with a fall of 50 per cent., and the corresponding figures for wheat, oilseeds, jute manufactures and pulses were 47, 43·4, 39·3, and 38 per cent. respectively. The only exception to this heavy fall in the prices of agricultural commodities occurred under the heading tea, which showed a decrease of 11 per cent. On the other hand, the decline in the prices of imported manufactured articles was relatively much smaller, being 22·4 per cent. in the case of cotton manufactures, and 22 and 16 per cent. respectively in that of sugar and metals,—which is a peculiarly significant and unfortunate fact, since it means that the prices of India's exports fell substantially more than those of her imports. This point is also clearly brought out by a consideration of the relative movements in the general index numbers of different countries. Between September 1929 and October 1930 the Calcutta Wholesale Price

Index Number fell by about 25 per cent., the corresponding falls during the same period in Japan and Australia being 24 and 20·5 per cent. respectively. As against this, however, the falls in the United Kingdom, Canada, and the United States amounted to only 17, 16 and 15 per cent. In other words, the depression affected those countries which chiefly produce raw materials far more than those which concentrate upon exporting manufactured articles. The process of the slump was of course by no means arrested in October 1930, but at the time of writing full particulars concerning the extent of the decline in foreign countries are not available. By the beginning of 1931, however, the Calcutta Index Number was over 30 per cent. lower than it had been in September 1929.

Paradoxical as it may at first seem, the net visible balance of trade in 1930 was but slightly lower than in the previous year. The fall in the value of imports, taking treasure into account, amounted to Rs. 64,36 lakhs, while exports declined by Rs. 67,50 lakhs,—with the result that the balance of trade in favour of India was Rs. 41,77 lakhs as compared with Rs. 44,91 lakhs in the previous year. But although the decreases in the values of imports and exports were almost equivalent, there was a great disparity in their volume. This however is simply due to the fact that the prices of exports fell much more steeply than those of imports, with the result that the same volume of exports could only buy a much smaller quantity of imports. The extent of the difference can be best indicated by figures: whereas the fall in the volume of imports as compared with that in 1929 amounted to 17·9 per cent., the volume of exports only declined by 0·4 per cent.

The greatest decrease under imports occurred, of course, in respect of cotton manufactures. The total value of the year's shipments,—including twist and yarn,—amounted to Rs. 33,60 lakhs as against Rs. 57,99 lakhs in 1929. Imports of twist and yarn amounted to 32 million lbs. valued at Rs. 3,67 lakhs as against 47 million lbs. valued at Rs. 6,54 lakhs in 1929, while those of piece goods amounted to 1,254 million yards valued at Rs. 29,93 lakhs as compared with 1,910 million yards valued at Rs. 51,45 lakhs. By far the largest part of the decline under both heads was borne by the United Kingdom. As regards twist and yarn, her share dropped from 22 to 12 million lbs., that is, by 45 per cent. On the other hand the fall in the case of other countries was considerably less. Japan sent 11 million lbs. in 1929 and other com-

petitors 13½ million lbs.; in 1930 imports from Japan amounted to 8 million lbs., and those from elsewhere to 12¼ million lbs. The same is true of the piecegoods trade. Imports of grey goods from the United Kingdom were 532 million yards in 1929, and in 1930 had fallen to 291 million yards, a decline of over 45 per cent. Imports from Japan during the same period declined from 374 to 265 million yards, and thus decreased by only 29 per cent. As regards white goods, the decline in imports from the United Kingdom was from 446 to 305 million yards, while imports from Japan actually increased from 9 to 26 million yards. Under coloured goods imports from the United Kingdom declined from 285 to 197 million yards, which represents a fall of 31 per cent., and imports from Japan under this head decreased in almost the same proportion. As regards the production of cotton manufactures by Indian mills, this increased considerably as compared with the preceding year, despite the unfavourable circumstances. The total production of piecegoods for the twelve months of 1930 was 2,519 million yards, as against 2,358 million yards in 1929; and the production of yarn also increased from 814 to 867 million lbs.

While textiles form the gloomiest patch in this picture of India's import trade, evidence of the severity of the slump is also afforded by the statistics of the imports of metals and ores, which, next to cotton manufactures, is the most important commodity in the import trade. Pig iron imports were somewhat better than a year before, but there was a substantial reduction in imports of manufactured iron and steel, which fell from 1,067,000 tons valued at Rs. 18,83 lakhs to 692,000 tons valued at Rs. 12,64 lakhs. A feature of the trade was the suspension of the price-controlling measures undertaken by the International Steel Cartel on the Continent which enabled European countries to under-sell the United Kingdom, the declines in the quantity imported from Britain and the Continent amounting to 43 and 28 per cent. respectively. An even more striking feature, however, was the proportion of the trade obtained by the United States, which actually showed an increase of 19 per cent. over the figure for the previous year, owing to larger shipments of tinplates and wrought tubes, pipes and fittings. As regards the various individual items in the trade, imports of galvanized sheets and plates declined from a total of 296,000 tons valued at Rs. 6,50 lakhs to 183,000 tons valued at

Rs. 3,67 lakhs; the share of the United Kingdom here fell from 244,000 to 119,000 tons, while there was an increase in the imports from Belgium from 45,000 to 56,000 tons, which were obtained at remarkably low prices. The trade in tin plates suffered a setback, imports falling from 29,000 tons valued at Rs. 92 lakhs to 24,000 tons valued at Rs. 78 lakhs; the United States pushed her sales from 9,000 to 12,000 tons at the expense of the United Kingdom, imports from which source fell from 19,000 to 12,000 tons. Imports of sheets and plates not galvanized or tinned fell from 66,000 tons valued at Rs. 89 lakhs to 46,000 tons valued at Rs. 63 lakhs; the share of the United Kingdom declined from 48,000 to 32,000 tons, and that of Belgium from 16,000 to 12,000 tons, while the contribution from Germany rose from 800 to 1,100 tons. The trade in steel bars other than cast steel declined from 183,000 tons valued at Rs. 2,13 lakhs to 98,000 tons valued at Rs. 1,07 lakhs; imports from Belgium and the United Kingdom fell from 85,000 and 43,000 tons to 50,000 and 22,000 tons respectively, and receipts from Germany, France and Luxemburg were also smaller. Purchases of beams, pillars, girders and bridgework, and of bolts and nuts, hoops and strips, and cast pipes and fittings, all declined substantially. An improvement however occurred in the trade in wrought pipes, tubes and fittings, the total imports having amounted to 38,700 tons valued at Rs. 1,19 lakhs as compared with 33,400 tons valued at Rs. 95½ lakhs in 1929, owing to larger arrivals from the United Kingdom, the Netherlands and the United States; but imports from Germany, Belgium, and France, on the other hand, declined. Purchases of nails and rivets, rails, chairs, sleepers, and iron and steel keys for railways were all on a greatly reduced scale. As regards metals other than iron and steel, imports of aluminium declined from 171,000 cwts. valued at Rs. 1,44 lakhs to 153,000 cwts. valued at Rs. 1,21 lakhs, and those of brass from 457,000 cwts., valued at Rs. 2,34 lakhs to 377,000 cwts. valued at Rs. 1,76 lakhs. Imports of copper rose from 164,000 to 177,000 cwts. in quantity but declined in value from Rs. 1,00 lakhs to Rs. 98½ lakhs. Imports of lead fell from 44,000 cwts. valued at Rs. 9½ lakhs to 38,000 cwts. valued at approximately Rs. 8 lakhs. Both tin and zinc imports increased in quantity from 55,500 and 182,000 cwts. to 57,200 and 196,000 cwts., but declined in value from Rs. 81 and Rs. 37 lakhs to Rs. 63 and 32 lakhs respectively.

The total value of imports of machinery and millwork amounted to Rs. 15,80 lakhs in 1930 as compared with Rs. 17,92 lakhs in the preceding year. This item of course can only be estimated by values, and any great change in price-levels renders comparison of volumes nugatory. Imports of cotton machinery were valued at Rs. 2,00 lakhs, and of electrical machinery at Rs. 2,30 lakhs, as compared with 2,10 and 2,43 lakhs respectively in 1929. Railway locomotive engines and tenders and parts advanced from Rs. 1,48 to Rs. 1,72 lakhs, boilers from Rs. 1,00 to 1,07 lakhs, mining machinery from Rs. 61 to 69 lakhs, refrigerating machinery and rice and flour milling machinery each from Rs. 23 to 25 lakhs, and sugar machinery from Rs. 8 to 15 lakhs. There were, on the other hand, decreases amounting in the aggregate to Rs. 59 lakhs under oil engines, oil crushing and refining machinery, paper machinery, agricultural machinery, and tea machinery. The United Kingdom's share in the total trade in machinery and millwork amounted to 75·3 as against 74·1 per cent. in the previous year, that of the United States to 10·8 as against 10·3 per cent., that of Germany to 8·3 as against 9·1 per cent., and that of other countries to 5·6 as against 6·5 per cent.

Imports of motor cars fell from 19,032 valued at Rs. 4,09 lakhs in 1929 to 12,017 valued at Rs. 2,64 lakhs in 1930, of which the United States supplied only 4,621 cars with a total value of Rs. 1,01 lakhs as compared with 11,138 cars valued at Rs. 2,26 lakhs in the preceding year. The number of cars imported from the United Kingdom fell from 3,721 to 3,205 and their value from Rs. 96½ lakhs to Rs. 81½ lakhs. Italy and France sent 931 and 242 cars as compared with 1,199 and 374 respectively in 1929. Imports of Canadian cars, however, rose from 2,425 valued at Rs. 44 lakhs to 2,833 valued at Rs. 48⅓ lakhs, chiefly as a result of the arrivals of new Ford cars during the year. As regards heavy motor vehicles, smaller consignments from the United States and the United Kingdom accounted for a drop in the total imports from 14,503 valued at Rs. 2,33½ lakhs to 9,740 valued at Rs. 1,60½ lakhs. The United States and the United Kingdom supplied 6,757 and 324 as against 11,590 and 441 respectively in 1929, while the number from Canada rose from 2,405 to 2,578. The United Kingdom sent 1,546 motor cycles out of a total of 1,647 as compared with 1,730 out of a total of 1,836 in 1929; the remainder came chiefly from the United States. Owing to its dependency on the

motor industry, the trade in rubber manufactures also suffered a setback, the value of the imports receding to Rs. 2,75 from Rs. 3,22 lakhs.

We may now turn to the export trade, in which raw cotton took the most important place. The quantity of raw cotton exported from India in 1930 showed an increase, but in the total value there was a serious fall, the figures being 727,000 as compared with 702,000 tons, but Rs. 54,58 as compared with Rs. 66,40 lakhs. Here again the reason for the decline in value was of course the slump in prices, which stood at Rs. 306-12 per candy for M. G. F. G. Broach on the 3rd of January 1930, and had fallen to Rs. 172-4 by the middle of the following December. The largest customer for Indian cotton was as usual Japan, which took 286,000 as against 293,000 tons. China, however, took 124,000 as compared with 82,000 tons. The takings of the United Kingdom increased from 45,000 to nearly 50,000 tons and those of Spain from 15,000 to 20,000 tons. On the other hand Belgium reduced her purchases from 65,000 to 46,000 tons, and the United States from 15,000 to 9,000 tons. Other countries took almost the same quantities as in 1929.

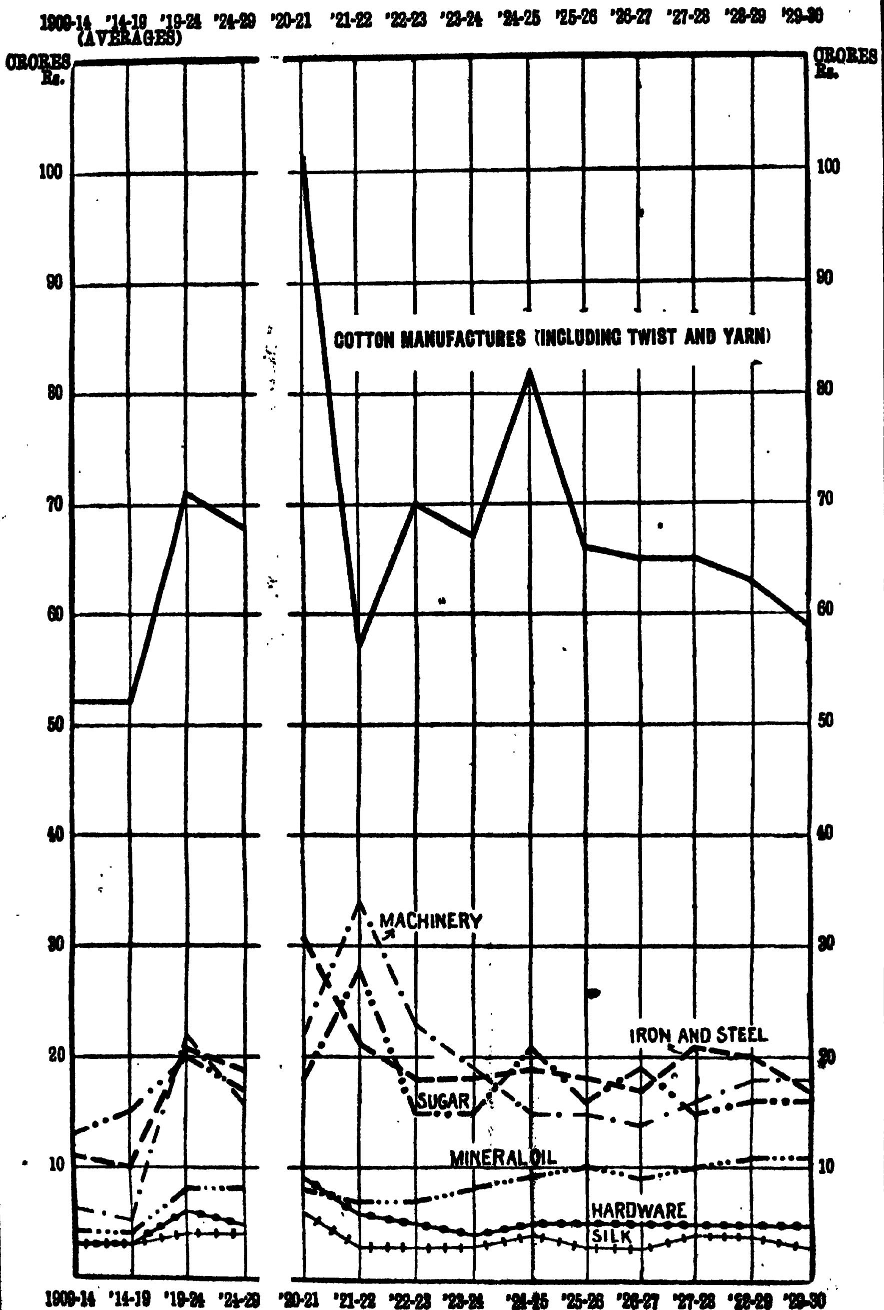
The total value of the exports of raw jute and jute manufactures during 1930 amounted to Rs. 52,95 lakhs as compared with Rs. 83,16 lakhs in the preceding year. Exports of raw jute declined from 857,000 tons valued at Rs. 29,64 lakhs to 626,000 tons valued at Rs. 15,47 lakhs; of gunny bags from 504 millions valued at Rs. 22,36 lakhs to 480 millions valued at 16,80 lakhs; and of gunny cloth from 1,641 million yards valued at Rs. 30,83 lakhs to 1,408 million yards valued at Rs. 20,28 lakhs. Thus the fall in value in the case of raw jute was Rs. 14,17 lakhs or 48 per cent. and in that of manufactures Rs. 16,04 lakhs or 30 per cent. This enormous decrease in value was of course due largely to the phenomenal fall in prices to which we have already referred. Of the total amount of raw jute exported, the United Kingdom took 109,000 as against 180,000 tons in the preceding year, Germany 177,000 as against 237,000 tons, France 86,000 as against 111,000 tons, and Italy 46,000 as against 56,000 tons. Decreases were also noticeable in the takings of the Netherlands and Spain from 23,000 and 46,000 tons to 19,000 and 32,000 tons respectively. Belgium took 48,000 tons,—the same amount as in the preceding year. The takings of the United States declined from 84,000 to

55,000 tons and those of Japan and Egypt from 16,000 each to 8,000 and 12,000 tons respectively. Brazil also took only 12,000 as compared with 20,000 tons. As regards gunny bags,—the total exports of which, as we have seen, amounted to 480 as compared with 504 millions in the preceding year,—the United Kingdom took 44 millions as compared with 51 millions. Belgium however took 13 as against 12 millions. The other European countries took almost the same amount as in the preceding year, except Norway and the Netherlands, which took 2 and 3 millions instead of half a million and one million respectively in the preceding year. In the Asiatic zone, Java took 46 as compared with 39 millions, and the Straits Settlements 14 as compared with 12 millions. On the other hand, China reduced her takings from 38 to 21 millions, Japan from 13 to 8 millions, Siam and Indo-China from 10 and 14 millions to 7 and 8 millions respectively, Egypt from 21 to 18 millions, and South Africa from 22 to 20 millions. There were no great changes in the takings of other African countries. The United States increased her share from 10 to 18 million bags. Cuba, on the other hand, took only 27 as compared with 34 millions, and Chile 22 as compared with 37 millions. Australia increased her takings from 70 to 94 million bags. Of the total exports of 1,408 million yards of gunny cloth, the largest purchaser, as usual, was the United States, which took 971 as compared with 1,061 million yards. The Argentine Republic took 215 as compared with 336 million yards, and Canada 74 as compared with 84 million yards. Decreases were also noticeable in the purchases of the United Kingdom and Australia, their takings amounting to 46 and 20, as compared with 52 and 27 million yards respectively.

We now come to the third item on the export list, namely food-grains. The total exports of rice amounted to 2,600,000 tons valued at Rs. 32,42 lakhs as compared with 2,048,000 tons valued at Rs. 28,98 lakhs in 1929. The increase was mainly due to the larger exportable surplus of Burma and the comparatively small quantities available from Siam and Indo-China. Chinese purchases of Indian rice amounted during the year to no less than 657,000 tons, as compared with 65,000 tons in 1929; of this total, 626,000 tons were received in the first six months and only 31,000 in the last. The next largest customer for Indian rice was Ceylon, which took 447,000 tons as compared with 436,000 tons in

the preceding year. The Straits Settlements took 290,000 as compared with 205,000 tons, and the United Kingdom 122,000 as compared with 38,000 tons. Increases were also noticeable in the purchases of Sumatra and Java which between them took 46,000 tons more than in the preceding year. The largest decline was in the case of Germany which reduced her demand from 271,000 to 146,000 tons. The Netherlands also reduced her takings from 111,000 to 88,000 tons. There were but small variations in the purchases of other countries. The coastwise exports of rice from Burma to India proper amounted to 754,000 tons in 1930, as compared with 845,000 in 1929 and 1,066,000 in 1928. As regards prices, the decline during the year was very great. In January 1930 the quotation per 100 baskets of 75 lbs. each was Rs. 357-8 and by December it had fallen to Rs. 220. Turning now to the other important export commodity included under foodgrains, namely wheat, the total exports during the year amounted to 194,000 tons valued at Rs. 1,93 lakhs as compared with 14,000 tons valued at Rs. 23 lakhs in 1929,—this immense increase of course being due to the fact that the 1930 crop in India was exceptionally good. The results obtained from it, however, cannot be considered other than very disappointing, for world conditions were adverse and prices fell precipitately. The outturn in all the other chief wheat-producing countries, namely the United States, Canada, the Argentine, and Australia, had been a good deal lower in 1929 than in 1928, but in 1930 there was a substantial improvement everywhere, which tended to depress prices; in addition, the carry-over in the four chief exporting countries other than India remained inordinately large, having been estimated at 6·8 million tons on the 1st of August 1928, 11·6 million tons twelve months later, and about 700,000 tons less than this on the 1st of August 1930, despite the fact that the total production had been lower by 14·5 million tons in 1929 than in 1928. In consequence the monetary return obtained for India's bumper crop in 1930 was extremely unsatisfactory, since whereas prices of white wheat in Karachi stood at Rs. 41 per candy of 656 lbs. on the 14th of January, they had fallen to the deplorably low figure of Rs. 17-2 by the 16th of December. As regards imports of wheat into India, these amounted to only 191,000 tons, as compared with 710,000 tons in 1929. Out of this total 110,000 tons were imported

Variations in the Values of Principal Articles in the Import Trade of British India during the last ten years as compared with averages of the pre-war, war and post-war periods.



in the first four months of the year, before the new crop came into the market.

The fourth item on the export list is oilseeds, shipments of which declined during the year from 1,349,000 tons valued at Rs. 30,10 lakhs to 1,012,000 tons valued at Rs. 20,09 lakhs. The fall affected all the principal varieties of oilseed except linseed, which was in larger demand owing to shortage of supplies in other producing countries. Nevertheless, even in this case there was a decline in value. The total exports of linseed during the year amounted to 261,000 tons valued at Rs. 5,65 lakhs as compared with 250,000 tons valued at Rs. 5,73 lakhs in 1929. As usual, shipments were mainly to the United Kingdom and the Continent. As regards groundnuts, which constitute the largest and most important item under this head, the exports during the year declined to 590,000 tons valued at Rs. 11,65 lakhs from the high record of 816,000 tons valued at Rs. 19,05 lakhs in 1929-30. With the exception of the Netherlands all the principal countries reduced their purchases. France took 185,000 as against 199,000 tons, Germany 138,000 as against 264,000 tons, Italy 54,000 as against 115,000 tons, the United Kingdom 41,000 as against 63,000 tons,—and the increase in the case of the Netherlands only amounted to 1,000 tons from the previous year's total of 148,000. The prices of groundnuts also fell very rapidly during the year. Exports of castor seed declined from 112,000 tons valued at Rs. 2,27 lakhs to 84,000 tons valued at Rs. 1,54 lakhs. The United Kingdom and the United States are the chief consumers of Indian castor seed and both reduced their purchases from 26,000 and 57,000 tons to 19,000 and 35,000 tons respectively. Italy took 5,800 tons,—1,000 less than in 1929. The shipments to France and Belgium, on the other hand, were better by 1,000 tons in each case, and amounted to 16,000 and 4,000 tons respectively. Exports of rape seed declined from 59,000 to 34,000 tons in quantity and from Rs. 1,28 lakhs to Rs. 59 lakhs in value. The United Kingdom, the Netherlands, Germany, and Belgium reduced their takings by 10,000, 12,000, 5,000 and 2,000 tons to 8,000, 5,000, 4,000 and 1,000 tons respectively, while France and Italy slightly increased their requirements. Exports of cotton seed fell off from 76,000 to 29,000 tons, of which the United Kingdom took 28,000 or 97 per cent. as compared with 66,000 tons or 87 per cent. in the preceding year.

This completes our survey of what took place in 1930, and we must now embark upon our analysis of the more detailed trade returns for the year 1929-30. The monsoon of 1929, although not so good as that of 1930, was adequate, but, as we mentioned in our last Report, heavy rains in some parts of the country, such as Assam, the Punjab and Sind, caused damage to the crops, while certain other regions suffered from drought. Taking the year as a whole, however, the rainfall was within 25 per cent. of normal, except in Sind, where it exceeded twice that amount. The rice crop of the year was quite good, the production however being 3 per cent. less than in the preceding year. The outturn of the wheat crop was 10 per cent. better than in 1928, which was a particularly bad year, but, as we have seen, it was markedly inferior to the 1930 crop. The yield of sugar-cane was 2 per cent. higher than in 1928-29. The cotton and jute crops were not as satisfactory as in the preceding season, the yield of the former having been less by 9 per cent. and that of the latter by 2 per cent. Among oilseeds, the outturn of the groundnut crop was 17 per cent. less than the record yield of the previous season, although 43 per cent. above the average for the preceding five years. Rape and mustard gave an increased outturn, but the sesamum and linseed crops were unsatisfactory. In so far as labour questions are concerned, the major incidents of the year were the two general strikes which convulsed the textile industry of Bombay and the jute mill industry of Bengal. These disputes, and the serious effect they had on the industrial situation, were described at some length in Chapter I of our previous Report. From October 1929, immediately after the Wall Street collapse, the general downward movement of the trade cycle set in. The precipitate fall in prices throughout the world, in so far as the year 1929-30 is concerned, was only excelled in magnitude by the post-war depression of 1920-21, and when more detailed figures for 1930-31 have been obtained than those set forth in the third paragraph of this Chapter, the movement will probably be found to have been unprecedented. In this country the general Index Number reckoned in the Department of Commercial Intelligence and Statistics in Calcutta stood at 143 in September 1929; by March 1930 it had fallen to 125 and in the following July it stood at 115. Within ten months therefore, there had been a fall of nearly 20 per cent., which is in itself an extraordinary figure for India, and, as we have seen, the process

was very far from being arrested at that stage. The trouble, moreover, has been aggravated, in so far as this country is concerned, by the fact that the fall in prices was on the whole far more pronounced in agricultural commodities and raw materials than in manufactured articles. The greatest decline was in the value of raw cotton and jute manufactures, both of which had fallen 27 per cent. by March 1930, as compared with September 1929. Raw jute and cereals each showed a decline of 20 per cent. and oilseeds of 19 per cent. As against this, the fall in cotton manufactures was only 7 per cent., in metals 10 per cent., and in sugar 6 per cent. The prices of India's exports therefore fell far more than those of her imports. If the percentage decline of prices in July instead of March is taken, the position was much worse, especially in the cases of raw cotton, raw jute, oilseeds, and hides and skins. The decline in raw cotton up to July 1930, as compared with September 1929, was over 40 per cent., and in jute, 35·5 per cent. Similarly the fall in oilseeds increased between March and July 1930 from 19 to 31 per cent., and in hides and skins from 8 to nearly 28·5 per cent. In the other export groups also there were further declines, though not of the same magnitude, and jute manufactures actually showed, as compared with the March figure, an increase of nearly 2 points.

The total value of imports of merchandise into British India in 1929-30 was Rs. 240·8 crores and that of exports Rs. 317·9 crores,—representing a decline of 5 per cent. in the former and 6 per cent. in the latter in comparison with the previous year. On the import side the outstanding feature of the year's transactions was a decline of Rs. 3,76 lakhs under cotton manufactures. Cotton piecegoods by themselves accounted for a reduction of Rs. 3,56 lakhs, corresponding to a decline of 17 million yards in quantity, the actual receipts of the year having amounted to 1,919 million yards with a total declared value of Rs. 50,25 lakhs. The striking feature in the piecegoods trade was the rapid penetration into the Indian market of Japanese imports. Twist and yarn exhibited a nominal advance in quantity from 43·8 to 43·9 million lbs. although the value declined from Rs. 6,29 to Rs. 6,00 lakhs. Among other items included in the textile group, artificial silk declined from Rs. 4,77 to Rs. 4,32 lakhs; silk, raw and manufactured, from Rs. 5,01 to Rs. 4,58 lakhs; and wool and woollens from Rs. 5,02 to Rs. 4,28 lakhs. There were interesting movements under sugar,

imports of which declined in value from Rs. 16,09 to Rs. 15,78 lakhs, despite an increase in quantity from 937,000 to 1,011,000 tons. An unusual feature was the remarkable expansion in receipts of beet sugar, which rose from 8,400 to 131,000 tons simultaneously with a reduction in imports of cane sugar from 860,000 to 807,000 tons. The dullness which had come upon the iron and steel import trade in 1928-29 persisted during the year, the total imports having declined from 1,170,000 to 972,700 tons in quantity and from Rs. 20,24 to Rs. 17,21 lakhs in value. In machinery and mill work, the developments noticed in the preceding year could not be maintained, and although advances were made under such items as electrical machinery, the total value for the whole group fell off by Rs. 8 lakhs to Rs. 19,35 lakhs, chiefly as a result of the weakening of demand in the mining, tea and sugar industries. One of the strikingly retrograde movements of the year was under motor vehicles, the total value of which fell from Rs. 7,72 to Rs. 7,52 lakhs,—the decline being almost entirely confined to consignments from Canada and the United States. On the other hand, the upward trend in imports of rubber manufactures was well sustained, the value having advanced from Rs. 2,86 to Rs. 3,30 lakhs. The total decline under metals and manufactures thereof, machinery and mill work, hardware, cutlery, implements, instruments, and vehicles, was from Rs. 67 crores to Rs. 63½ crores. There was a remarkable improvement under imports of mineral oils, which advanced from 241·9 million gallons valued at Rs. 10,70 lakhs to 252·7 million gallons valued at Rs. 11,04 lakhs. Imports of wheat, which had advanced from 69,200 tons valued at Rs. 1,09 lakhs in 1927-28 to 561,900 tons valued at Rs. 8,17 lakhs in 1928-29, came down to 357,000 tons with a total declared value of Rs. 4,98 lakhs, owing to the fact that, although the Indian crop was poor, it was distinctly better than in the preceding year.

As regards the exports, the principal phenomenon was the serious depression in the world demand for jute. The total weight of raw and manufactured jute exported fell by 44,000 tons to a total of 1,765,000 tons and the value slumped from Rs. 89 to Rs. 79 crores. Fifty per cent. of the decline in value is attributable to raw jute, exports of which fell from 5,028,000 to 4,519,000 bales in quantity and from Rs. 32 to Rs. 27 crores in value. Shipments of gunny bags advanced, but the gain was discounted by the fall in prices, which sent down the value from Rs. 25 to Rs. 22 crores.

A similar movement was recorded under gunny cloth, the total value for which sagged from Rs. 31⅔ to Rs. 29⅓ crores despite an increase in yardage from 1,568 to 1,651 millions. Under cotton the values of the year's shipments of the raw product and manufactures thereof declined from Rs. 74,49 to Rs. 72,79 lakhs. Shipments of raw cotton actually expanded from 3,712,000 bales to 4,070,000 bales, but the value declined from Rs. 66 to Rs. 65 crores. Exports of cotton manufactures were valued at Rs. 7,19 lakhs, which was Rs. 61 lakhs less than in the previous year. Under food grains, the total shipments advanced from 2,300,000 tons valued at Rs. 33,69 lakhs to 2,510,500 tons valued at Rs. 34,79 lakhs, but this improvement was confined almost wholly to rice, exports of which increased from 1,817,400 to 2,326,000 tons in quantity and from Rs. 26,47 to Rs. 31,51 lakhs in value. Exports of wheat, which amounted to 13,000 tons valued at Rs. 21 lakhs, were shorter than the exports of 1928-29 by 102,000 tons in quantity and Rs. 1,48 lakhs in value; this may seem curious, in view of the fact that the 1928-29 crop was distinctly the better of the two; but it will be recollected from what we said on the subject in our previous Report, that the extent of the failure of the 1927-28 crop in India was not realized until somewhat late in the season. In tea the depression of the previous year was intensified, the value of shipments declining from Rs. 26,60 to Rs. 26,01 lakhs, notwithstanding an increase in quantity from 359·6 to 376·6 million lbs. Exports of oilseeds amounted to 1,195,000 tons valued at Rs. 26,46 lakhs, representing a decline of 10 per cent. in quantity and of 11 per cent. in value; the decline was accounted for by a falling-off in the shipments of groundnuts, part of which, however, was off-set by an increase of linseed exports. Hides and skins declined from 89,600 tons valued at Rs. 18,87 lakhs to 74,100 tons valued at Rs. 16,03 lakhs. Shipments of lac also fell from 743,000 cwts. valued at Rs. 8,64 lakhs to 669,000 cwts. valued at Rs. 6,97 lakhs. Exports of oilcakes, which had shown an abnormal development in 1928-29, fell off by Rs. 72 lakhs to Rs. 3,12 lakhs.

Coming now to re-exports, their total value amounted to Rs. 7,13 lakhs, representing a decline of Rs. 10 lakhs from the previous year's figure and of Rs. 2,41 lakhs from that of 1927-28. Most of the re-exports pass through Bombay. The outstanding movement of the year was a decline in shipments of raw skins from 333 tons valued at Rs. 1,53 lakhs to 211 tons valued at Rs. 1,05

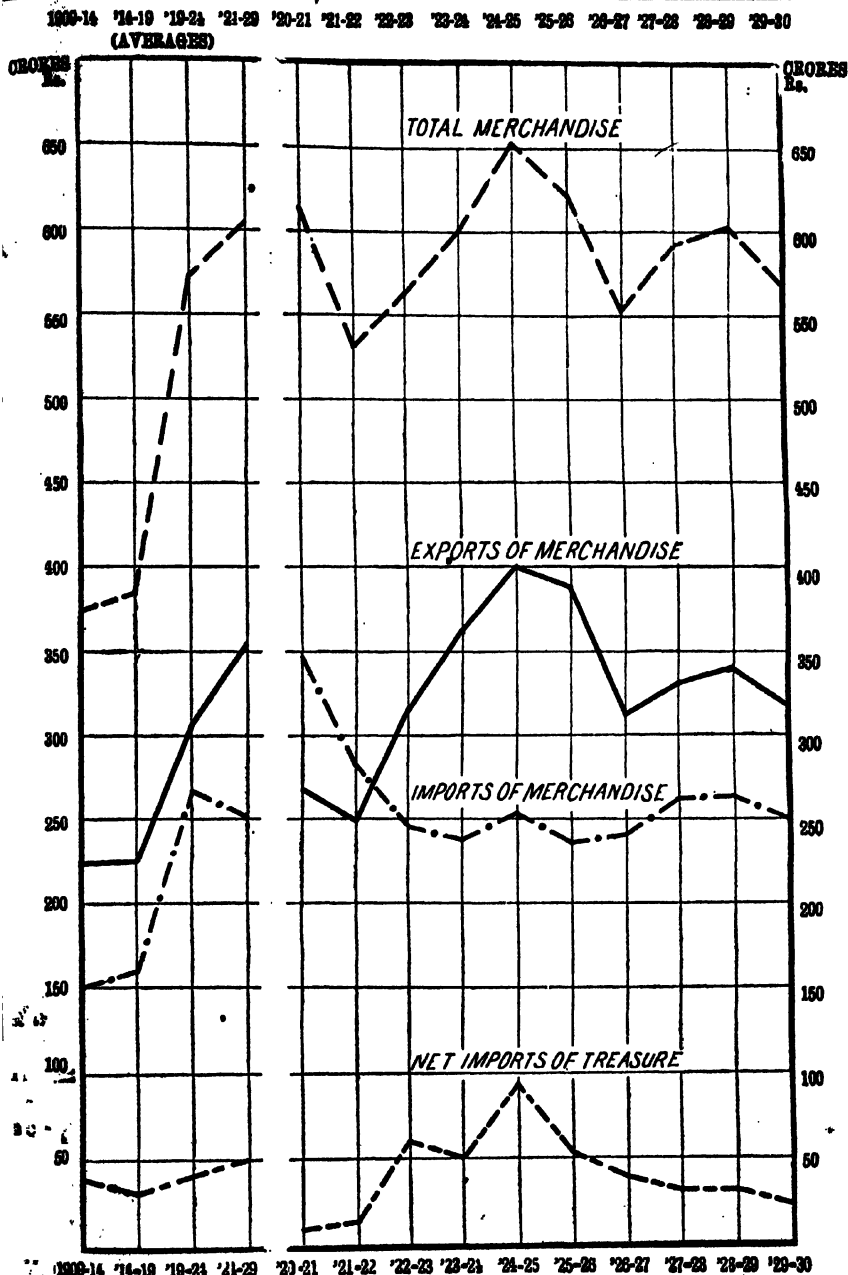
lakhs. Re-exports of raw cotton, which had fallen off from 2,790 tons valued at Rs. 44 lakhs in 1927-28 to 551 tons valued at Rs. 9 lakhs in 1928-29, recovered to 1,425 tons valued at Rs. 19 lakhs in 1929-30. Shipments of sugar contracted from 10,000 tons to 7,000 tons in quantity and from Rs. 23 lakhs to Rs. 17 lakhs in value. Re-exports of cotton manufactures fell from Rs. 89 lakhs to Rs. 78 lakhs; and those of raw wool from 12 million lbs. valued at Rs. 94 lakhs to 8 million lbs. valued at Rs. 65 lakhs.

The visible balance of trade in merchandise and treasure for the year 1929-30 was in favour of India to the extent of Rs. 53 crores, as against Rs. 52 crores in the preceding year, Rs. 50 crores in 1927-28, and the record figure of Rs. 109 crores in 1925-26. It may be of interest for readers to contrast the 1929-30 figure with that which we have already given for 1930 in an earlier paragraph. The net imports of treasure on private account during 1929-30 fell from Rs. 34 crores to Rs. 26 crores, of which net imports of gold were valued at Rs. 14 crores and of silver at Rs. 12 crores. Consideration of the direction,—as contrasted with the balance,—of trade, which in our last Report was undertaken at this stage, will this year be reserved until later.

Having indicated in outline the more significant features of the year's imports and exports, we may now proceed to fill in the details in respect of the outstanding commodities,—taking imports, as usual, first. As before, the largest item among these was cotton goods. But in view of the very far-reaching and important changes which have recently been taking place in the Indian cotton goods trade,—and of the fact that in 1930, for the first time, the principle of discriminating protection was applied to the indigenous manufacturing industry,*—it seems advisable, before we undertake our analysis of the year's figures, to attempt some sort of historical examination of the chief tendencies of the trade during the last three decades; for to the economist of the future, the year 1930 will certainly appear to have marked the beginning of a new era. The most striking feature, then, of the cotton trade between the years 1900-01 and 1913-14 was the general and substantial increase in the consumption of piecegoods. In the first year of the new century the quantity India used was 229 crore yards or 7·79 yards per head. Of this, imports accounted

* The details of this change were described in Chapters I, III, and VI of our previous Report.

Foreign Sea-borne Trade of British India during the last ten years as compared with averages of the pre-war, war and post-war periods.
(Private and Government)



M 2

for 194 crore yards and Indian mill-production for 35 crore yards. By 1907-08, with slight ups and downs, the consumption figures had gone up to 321 crore yards or 10·39 yards per head, imports amounting to 247 crore yards, and Indian mill-production to 74 crore yards. There was a slight set-back for two or three years after this, but the three years before the War saw an enormous increase in the consumption of cotton goods. By 1912-13 it amounted to 408 crore yards, and in 1913-14 to 420 crore yards, or 13·29 yards per head. This is the record figure for the whole thirty years. Out of this, imports from abroad accounted for 313 crore yards, and Indian mill-production for 107 crore yards. The War, by affecting the Lancashire industry and interfering with shipping, reduced British imports considerably; and owing to the difficulty of setting up new mills and of importing machinery, the production of Indian mills also could not be increased very much. The average consumption of Indian mill-produce in the five war years was about 129 crore yards. Imports, however, declined substantially from year to year, and in 1918-19 and 1919-20 they reached the lowest figure on record, namely 100 crore yards. The total consumption in 1918-19 was only 231 crore yards or 7·26 yards per head. In the post-war period there was again a tendency for consumption to increase, though there have been considerable ups and downs. In the last normal year, namely 1927-28, the total consumption reached 413 crore yards or 12·11 yards per head. Of this, however, imports accounted for 194 crore yards, which is far less than the record figures of the last two pre-war years; and on the other hand, Indian mill-production greatly increased. From about 144 crore yards in 1919-20 the balance available from this source went up to 219 crore yards or 6·42 yards per head in 1927-28. There was a set-back owing to strikes in 1928-29, but in spite of the unsettled conditions things improved in 1929-30, when the balance available from Indian mill-production amounted to 229 crore yards. Imports, on the other hand, kept more or less steady during the three years prior to 1930-31. The consumption figure for 1929-30, namely 12·04 yards per head, was exceeded only once during the post-war period,—in 1927-28. In general, before the War, imports easily held the predominant position in the piecegoods market in India, but at present imports and Indian mill-production are almost of the same magnitude, the advantage tending to lie with the latter; for

whereas in 1913-14, out of 13·29 yards consumed per head in India, 9·90 were imported, and only 3·39 were produced in the country, in 1929-30, out of a total per head consumption of 12·04 yards, only 5·46 were imported, while 6·58 were of Indian manufacture. The growth of the Indian mill industry in the last thirty years has therefore clearly been very great, and India is now succeeding to a large extent in meeting her demand for piecegoods from her own production. As regards the position of the various countries competing for the import trade, before the War by far the larger part of the imports of piecegoods into India came from the United Kingdom. In 1913-14, for example, out of the total imports of 3,197 million yards, 3,104 came from the United Kingdom, and all the other countries between them accounted for only 93 million yards. The War helped some of the competing countries, however, and especially Japan. In 1918-19, out of the total imports of 1,122 million yards, 867 came from the United Kingdom, and 238 from Japan. Competition from Japan flagged in the four or five years after the War, but from 1923-24 Japanese imports began steadily growing. In 1927-28, out of the total imports of 1,973 million yards, the United Kingdom accounted for 1,543 and Japan for 323. Next year imports from Japan went up to 357 million yards, and the record was reached in the year now under review. Out of the total imports of 1,919 million yards, those from the United Kingdom amounted to only 1,248 while Japan sent 562. Imports from other countries,—particularly the United States, Italy, Switzerland and China,—have also grown somewhat, and amounted to 109 million yards in 1929-30. The falling-off in the United Kingdom's share in the trade from 3,104 million yards in 1913-14 to 1,248 in 1929-30 was thus mainly due, first, to an increase of nearly 1,255 million yards in the production of Indian mills, and secondly to an increase of over 550 million yards in the imports from Japan.

So far as the year under review is concerned, the statistical position of the trade was not very unfavourable in comparison with previous years, but an intense pessimism prevailed. Circumstances conspired to make the whole situation appear full of difficulties. As in the year 1928-29, the labour situation throughout the year was very much disturbed. The termination of the general strike in the Indian mills in October 1928 did not bring any real peace; from the 4th of October, the date on which the strike

officially ended, to the end of the official year 1928-29, there were no fewer than 71 minor strikes in various mills; and as we have already mentioned, another general strike, whose course was described in detail in our last Report, broke out in April 1929 and did not fully conclude until September. The second factor which affected the trade was the unsettled conditions in Lancashire. The employers there were convinced that the rehabilitation of the industry required a cut in wages, and in June they made out claims, both in the spinning and weaving branches, for a reduction of 25 per cent. on list rates. The negotiations that followed ended in a deadlock, as a result of which there was a strike for three weeks from the 29th of July. The Ministry of Labour, however, intervened at an early stage, and it was agreed to submit the dispute to an Arbitration Board, which ultimately awarded a reduction of 12½ per cent. on list rates. This, unfortunately, caused discontent, and towards the end of the year there were indications that the question of the cut might be re-opened by the operatives. On the other hand, apart from labour troubles, the situation in Lancashire, though very unsatisfactory, was not devoid of hopeful features. An important step in the direction of rationalizing the industry was the registration of the Lancashire Cotton Corporation in January 1929 with the object of taking over a number of the existing mills, and before the end of the year it was reported that 71 concerns with 6,750,000 spindles and 20,000 looms had agreed to come under the Corporation. The third factor which complicated the condition of the trade from the Indian point of view, however,—and which was referred to in last year's Report,—was the embargo placed on the imports of certain kinds of piecegoods by the Marwari Chamber of Commerce in Calcutta. The Chamber put an embargo on imports of greys and whites in April and May 1929, and also in September; an embargo was also laid on the imports of whites in October. These prohibitions were subsequently extended to transactions in April and May 1930, and it was subsequently resolved that no fresh contracts should be made until after the end of December. The fourth factor which introduced uncertainty into the market was the expectation of higher duties on imported cotton piecegoods. This belief was particularly strong in the latter part of the year, but to some extent it had been present since Mr. Hardy was appointed Cotton Tariff Officer at the end of July. Mr. Hardy's report, which was

issued in November 1929, revealed the extreme severity of the Japanese competition, more especially in grey goods, and thus provided an additional reason for the belief that an increase in duties was imminent. Further, it was by that time known that the financial position of the Government of India in the year 1930-31 would be far from satisfactory, and that some fresh means of raising revenue would probably have to be devised. Speculations on the subject caused much uncertainty in the market, but were laid to rest when the Finance Member in his Budget statement in February 1930 announced, firstly, the increase of the import tariff on cotton piecegoods from 11 to 15 per cent., and, secondly, the intention of the Government to introduce legislation for the imposition of an additional protective duty on piecegoods of non-British origin. The fifth important factor which affected the trade was the uncertainty in the raw cotton market. Early in the year there were apprehensions regarding the future course of prices. In April American middling cotton had sunk to about 10*d*. in Liverpool, and although there were indications that the bottom had been reached, the situation was unexpectedly complicated by the wheat crisis on the stock markets of the United States and the resulting stringency in the New York money market. As long as stable conditions were unattainable all dealers were chary of making forward purchases. Up to the end of August prices were generally between 10*d*. and 10½*d*. but from the end of that month there was a decline, and between October and January prices stood at about 9½*d*. Thereafter there was a sharp decline to 8*d*. in March, and subsequently prices fell still further. The last factor was the political situation, whose influence is difficult to calculate. The boycott agitation carried on by the Congress Party was not very vigorous during the first half of the year, but uncertainty concerning future developments in this direction had a serious effect upon trade during the last six months of the period, and there was much uneasiness as to what might happen in 1930.

The total value of imports of cotton manufactures decreased by nearly Rs. 3¾ crores during the year, of which Rs. 3½ crores came under piecegoods and Rs. ¼ crore under yarn. There was a fall of 17 million yards in the quantity of piecegoods imported, but imports of yarn were almost equal in quantity to those of 1928-29. Let us consider yarn first. The average declared value of the

imports during the year was Rs. 1-5-10 per lb., as compared with Rs. 1-7-0 in 1928-29,—this fall being quite sufficient to explain the decline in the total value of the yarn received. The United Kingdom supplied 20·1 million lbs. of the total imports, Japan 10·9 million lbs., and China 10·6 million lbs. Imports from these countries were 23·1, 7·6, and 11·4 million lbs. respectively in the previous year. The share of the United Kingdom, therefore, declined, while that of Japan showed an increase. China seems to be just holding her own in this market; it should be noted that there is reason to believe that most of the imports from China come from mills under Japanese management. Other sources of imports of yarn into India included Italy (1,429,000 lbs.) and Switzerland (694,000 lbs.). As regards indigenous manufacture, the production of yarn in Indian mills increased enormously during the year under review,—reaching the record figure of 834 million lbs., as compared with 648 million lbs., in 1928-29 and 809 million lbs., in 1927-28. These figures are sufficient to indicate the main features of the trade in yarn during the year, and we may now revert to the question of cotton piecegoods. As we have seen, the decrease in the quantity of piecegoods imported was only 17 million yards in comparison with the 1928-29 figure, but the fall in value was substantial, and amounted to no less than Rs. 3,56 lakhs. Compared with the pre-war year 1913-14, the imports of 1929-30 were less by over 1,278 million yards. Imports of grey or unbleached goods during the year, however, nearly reached the record post-war figure of 1922-23 and amounted to 925·5 million yards, an increase of 87 million yards over the preceding year's figure. The increase was mainly in plain grey goods, which advanced by 72 million yards. Imports of white or bleached goods, on the other hand, declined very considerably by about 80·5 million yards, the decrease under this head being thus almost equal to the increase under grey goods. As far as values are concerned, the imports of grey goods showed an increase of Rs. 73 lakhs, whereas the decline under white goods was Rs. 2,06 lakhs and that under coloured goods Rs. 2,20 lakhs. As regards grey goods, the United Kingdom's share in the imports decreased by 10 per cent. from 582 to 521 million yards, but the Japanese share, on the other hand, increased by 63 per cent. from 242 to 394 million yards. The increase of 87 million yards in the total imports shows that Japan was competing effectively with indi-

genous Indian production, besides ousting the United Kingdom from this class of imports. The quantity received from China however declined by about 3½ million yards, and that from the United States by about half a million yards. Turning now to white goods, these were, as usual, mainly imported from the United Kingdom, but since the quantity received from that country declined by no less than 89 million yards, there was a substantial decline in the total imports under this head. The reduction in the amount received from the United Kingdom was undoubtedly due in large measure to political boycott. On the other hand it should be noted that even in white goods Japan increased her comparatively small share from 5·5 million yards in 1928-29 to 13·9 million yards in 1929-30. The shares of other countries showed but slight variations. Under coloured, printed or dyed piecegoods the share of the United Kingdom fell by 57, and that of Italy by 13 million yards; but here again the Japanese share increased by no less than 44 million yards. The percentage shares in 1913-14 and in the past five years of the United Kingdom and Japan,—the two principal competitors in the Indian piecegoods import trade, —in each of the three important classes of piecegoods, are set forth in the table overleaf, which is followed by a further table showing the percentage shares of all countries in the total quantities of piecegoods imported irrespective of their class. The outstanding feature of both tables, it will be seen, is the continuous trends in opposite directions of the percentage figures of the United Kingdom and Japan during the last few years.

Percentage shares of the United Kingdom and Japan in imports of the three principal classes of Cotton piecegoods.

	1913-14.		1925-26.		1926-27.		1927-28.		1928-29.		1929-30.	
	United Kingdom.	Japan.	United Kingdom.	Japan.	United Kingdom.	Japan.	United Kingdom.	Japan.	United Kingdom	Japan.	United Kingdom.	Japan.
Cotton piecegoods												
Grey	98·8	·5	79·2	20·1	78·7	20·7	74·4	24·5	69·4	28·8	56·2	42·5
White	98·5	...	96·0	1·0	96·4	·5	94·7	1·0	94·8	1·0	92·1	2·9
Coloured	92·6	·2	73·1	19·0	71·1	19·2	69·8	20·3	66·2	21·7	57·6	31·9

Percentage shares in the total quantities of piecegoods imported.

	1913-14.	1920-21.	1921-22.	1922-23.	1923-24.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.
United Kingdom	97·1	85·6	87·6	91·2	88·8	88·5	82·3	82·0	78·2	75·2	65·0
Japan	·3	11·3	8·3	6·8	8·2	8·5	13·9	13·6	16·4	18·4	29·3
United States	·3	·9	2·1	·5	·5	·5	1·0	·9	1·4	1·5	1·7
Netherlands	·8	·9	1·1	·8	·7	·6	1·1	1·1	1·0	1·0	1·1
Other Countries	1·5	1·3	·9	·7	1·8	1·9	1·7	2·4	3·0	3·9	2·9
Total	100	100	100	100	100	100	100	100	100	100	100

Before we leave the question of imports of cotton goods it may be of interest to mention that nearly 44·7 per cent. of the total quantity of piecegoods imported in 1929-30 was received in Bengal, as compared with about 43·5 per cent. received in 1928-29. The share of Bombay, and also of Sind, declined slightly, while the smaller shares of Madras and Burma went up.

Metals and manufactures thereof come next in order of value in the list of India's imports, and represented, during the year under review, 9·8 of the total; and if such items as are grouped under the heading of machinery and millwork,—which come third on our list, —were included with metals, their combined percentage value would amount to 17·4, and would thus be only 8·7 points less than the figure for the most important item of all, namely cotton and cotton goods, with which we have just been dealing. During the year under review the imports of metals and manufactures of metals declined by 17 per cent. in quantity from 1,232,000 to 1,028,000 tons and by 13 per cent. in value from Rs. 27 to Rs. 23½ crores. Iron and steel represented Rs. 17 crores of this total as compared with Rs. 20 crores in 1928-29. The world's output of both pig iron and steel in 1929 exceeded the record figures of the preceding year, and was estimated at 98 and 119 million tons as compared with 88 and 110 million tons respectively in 1928. All the principal countries contributed to this increase, the most noticeable advances being made by the United States, Germany, and the United Kingdom. The United States' production of pig iron increased from 39 to 43 million tons and of steel from 51 to 55 million tons,—that country being therefore responsible for 44 per cent. of the world's total production of pig iron and for 46 per cent. of the production of steel. In the United Kingdom the production of pig iron was estimated at 7·7 million tons,—a higher figure than in any post-war year except 1920,—and that of steel at 9·8 million tons. The increase in the production of the United States was not of much international significance, as she has had to meet a very large internal demand; and so far as the United Kingdom is concerned the improved production figures do not signify any real improvement in the financial position of the British industry, for during 1929,—and particularly in the latter half of the year,—the cost of raw materials was moving faster than the price obtainable for the finished product. Nevertheless, the United Kingdom remained the largest supplier of iron and steel

to India, though her proportion in the import trade is declining as a result of competition from other European countries; moreover India's own production is developing fairly rapidly. As regards pig iron the total imports into India, including ferro-alloys, amounted during the year to 3,300 as compared with 3,200 tons in 1928-29, of which the United Kingdom supplied 2,700 and Italy 543 tons as against 2,400 tons and 510 tons respectively in the preceding year. The price of Cleveland pig iron was £3-7s. per ton in April 1929, reached £3-13-6 in July, and subsequently declined until in March 1930 it stood at £3-7-6. Turning now to manufactured iron and steel, the imports during the year declined in quantity from 1,165,000 to 968,000 tons and in value from Rs. 20,19 to Rs. 17,16 lakhs. Galvanised sheets continued to be the largest item under this head and represented 32 per cent. of the total value, as compared with 35 per cent. in 1928-29; imports of this commodity have however shown a tendency to decline in recent years, owing to the increase in indigenous production caused by the Indian tariff. The total quantity of galvanised sheets imported in 1929-30 was 258,000 tons valued at Rs. 5,56 lakhs as compared with 326,000 tons valued at Rs. 7,11 lakhs in the previous year. The United Kingdom still has a world-wide trade in this line, though competition from certain European countries has seriously reduced it. Her share of the imports to India fell from 286,000 tons in 1928-29 to 200,000 tons in 1929-30, while Belgian supplies rose from 32,000 to 51,000 tons. Imports of tinplates continued to show a steady increase and reached 31,000 tons valued at Rs. 1,00 lakhs as compared with 27,000 tons valued at Rs. 87 lakhs in 1928-29. The trade is practically divided between the United Kingdom and the United States, the former supplying 22,000 tons of the total quantity imported. The arrangement between the Welsh and American manufacturers which we described in our last Report, whereby the Welsh makers are allowed a 70 per cent. proportion of the trade, has apparently met with success. Imports of sheets and plates, not galvanized or tinned, fell from 80,000 tons valued at Rs. 1,09 lakhs to 62,000 tons valued at Rs. 82 lakhs. The share of the United Kingdom declined from 54,000 to 45,000 tons and that of Belgium from 24,000 to 14,000 tons. Imports of steel bars, other than cast, amounted to 169,000 tons valued at Rs. 1,92½ lakhs as against 170,000 tons valued at Rs. 1,92 lakhs in 1928-29. Belgium and Luxemburg together

supplied 120,000 tons as compared with 96,000 tons in 1928-29, while the imports from the United Kingdom dropped from 47,000 tons to 32,000 tons. The import fluctuations in other manufactured iron products such as bars and channels, beams, pillars, girders, rails, chairs, fishplates, tubes, pipes, and fittings were not sufficiently substantial to require individual description, though all declined in quantity and nearly all in value. Taking the import trade in iron and steel as a whole, the outstanding events were, firstly, a decline in the total quantity imported, and secondly, a decline in the proportion taken from the United Kingdom, which amounted during the year to 49 per cent. as against 55·5 per cent. in 1928-29. The share of Belgium, on the other hand, rose from 28·5 per cent. to 32·1 per cent. Supplies from Germany and France declined. The United States, in spite of her enormous productive capacity, supplied a very small proportion of India's requirements,—no more indeed than about 1·5 per cent. during the past three years.

As regards metals other than iron and steel, the total imports during the year declined from 62,400 tons valued at Rs. 6,74 lakhs to 55,500 tons valued at Rs. 6,38 lakhs. Aluminium was in greater demand,—the imports rising from 127,000 cwts. valued at Rs. 1,07¾ lakhs to 171,000 cwts. valued at Rs. 1,42¼ lakhs. Wrought circles, which form the raw material of the Indian hollow-ware manufacturing industry, and accounted this year for 92 per cent. of the total quantity of aluminium imported, increased from 112,000 cwts. valued at Rs. 92 lakhs to 158,000 cwts. valued at Rs. 1,28 lakhs. Imports of this commodity from the United Kingdom rose in quantity from 38,000 to 42,000 cwts. and in value from Rs. 32¼ to Rs. 36 lakhs, while those from the United States advanced from 46,000 cwts. valued at Rs. 37½ lakhs to 63,000 cwts. valued at Rs. 50⅓ lakhs. Imports from Germany, which had declined during the previous two years, also showed a marked improvement, and France and Switzerland increased their supplies as well. Wrought sheets, on the other hand, which are imported chiefly from the United States and the United Kingdom, declined from 5,000 to 4,000 cwts. in quantity and from Rs. 4 to Rs. 3 lakhs in value. Imports of other forms of wrought aluminium, consisting mainly of wire and utensils, increased in quantity from 8,300 cwts. to 8,500 cwts., but the value remained almost stationary at Rs. 10¾ lakhs; while those of unwrought aluminium fell from 1,300 cwts. valued at Rs. 1 lakh to 1,000 cwts. valued at a little over Rs. ½

lakhs. As regards brass, the total imports decreased from 529,000 to 432,000 cwts. in quantity and from Rs. 2,53¼ lakhs to Rs. 2,23 lakhs in value. Mixed or yellow metal for sheathing, which constituted about 84 per cent. of the total imports, fell from 456,000 cwts. valued at Rs. 2,15½ lakhs to 363,000 cwts. valued at Rs. 1,83¼ lakhs. The decrease was most noticeable in the supplies from the United Kingdom and Japan, which amounted to 82,000 and 48,000 cwts. as compared with 153,000 and 63,000 cwts. respectively in 1928-29. Imports from Germany, which is by far the largest supplier, fell in quantity from 234,000 to 232,000 cwts. but rose in value from Rs. 1,11 to Rs. 1,14 lakhs. Other manufactures of brass, such as rods, sheets, tubes and wire, all increased somewhat in value. Imports of unwrought brass were insignificant. Turning now to copper, the imports here declined from 270,000 cwts. valued at Rs. 1,42 lakhs to 147,000 cwts. valued at Rs. 93 lakhs, and included 126,000 cwts. of wrought, and 16,000 cwts. of unwrought copper. In unwrought copper, the share of the United Kingdom receded from 14,000 cwts. to 12,000 cwts. and in wrought copper from 77,000 to 32,000 cwts. The supplies of wrought copper from Germany, France and Belgium also fell. Imports of lead declined from 45,000 cwts. to 44,000 cwts. in quantity but increased in value from Rs. 9⅓ to Rs. 9½ lakhs. Sheets for lining tea-chests declined from 9,300 cwts. valued at Rs. 2¼ lakhs to 8,700 cwts. valued at Rs. 2 lakhs, there being a further reduction in the supplies from the United Kingdom and Ceylon; wrought sheets, and pipes and tubes, increased in value by Rs. 50,000 to Rs. 5 lakhs. The world's supplies of tin being ample, prices of this metal continued low during the year, and Indian purchases were larger. The imports, consisting mostly of unwrought tin from the Straits Settlements, increased in quantity from 50,000 to about 58,000 cwts., but in value only from Rs. 79 lakhs to Rs. 80½ lakhs. As regards zinc, before the removal of the duty in April 1927, the imports of the unwrought metal were smaller than those of the wrought, the former amounting to 37,000 and of the latter to 140,500 cwts. in 1926-27. The position however has now been reversed, imports of unwrought zinc having risen from 106,000 cwts. in 1927-28 to 143,000 cwts. in 1929-30, and those of wrought zinc having fallen from 63,000 to 51,000 cwts. during the same period. The total quantity of zinc or spelter of all sorts imported during the year, however, increased

from 171,000 cwts. to 194,000 cwts. and in value from Rs. 32¾ lakhs to Rs. 39¾ lakhs. German silver, including nickel silver, was less in demand during 1929-30, the imports having declined from 24,000 cwts. valued at Rs. 20½ lakhs to 20,000 cwts. valued at Rs. 16¾ lakhs. The chief sources of supply were Austria, Italy, Germany, and the United Kingdom. Imports of quicksilver also decreased from 263,000 lbs. to 197,000 lbs. in quantity and from Rs. 10 lakhs to Rs. 8¼ lakhs in value.

As regards machinery and millwork (including belting for machinery and printing presses), which is the third item on our list, the total value of the imports during the year was Rs. 19,35 lakhs, as against Rs. 19,43 lakhs in 1928-29. There were however some interesting increases within this group, such as that recorded under prime-movers, (other than electrical), imports of which rose from Rs. 3,04 lakhs to 4,12 lakhs, owing to more extensive purchases of railway locomotive engines and tenders and parts. Again, the value of the textile machinery imported, which usually forms the most important item, also rose, though not so markedly, the figure being Rs. 3,82 as against Rs. 3,65 lakhs. For this increase jute mill machinery and wool machinery were entirely responsible, their values having amounted to Rs. 1,44 lakhs and Rs. 6 lakhs respectively. Imports of cotton machinery, on the other hand, fell from Rs. 2,16 lakhs to Rs. 2,10½ lakhs. As usual, the United Kingdom had the largest share in the import trade in textile machinery, her supplies having been valued at Rs. 3,52 lakhs or 92 per cent. as compared with Rs. 3,41 lakhs or 93 per cent. in the year before. The upward trend in the imports of electrical machinery, owing to progress in the electrification of industries in India,—to which reference was made in the last issue of the Report,—was well maintained during the year, the value of imports having increased from Rs. 2,37 to Rs. 2,41 lakhs. The increase was mainly confined to control and switch gear, transformers and turbo-generating sets, while there was a decrease under certain unspecified descriptions of electrical machinery, the value of which fell from Rs. 1,01½ to Rs. 88 lakhs. The shares of the United Kingdom and the United States in the total imports under this head declined from Rs. 1,85 and Rs. 26 lakhs to Rs. 1,83 and Rs. 20 lakhs respectively, while Germany's share increased from Rs. 13 to Rs. 16 lakhs. Coming to the other kinds of machinery, there were substantial decreases under mining machi-

nery,—namely from Rs. 80 to Rs. 61 lakhs,—tea machinery,—Rs. 40 to Rs. 28 lakhs,—and sugar machinery,—Rs. 17½ to Rs. 9 lakhs. Moreover imports of paper mill machinery, which had shown a remarkable expansion in 1928-29 in consequence of the establishment of a new mill in the Punjab, fell from Rs. 35 lakhs to Rs. 7 lakhs. Imports of typewriters and sewing and knitting machines also declined. The value of imports of beltings of all descriptions advanced by Rs. 7 lakhs to Rs. 90 lakhs, the respective gains under cotton and leather beltings having been Rs. 2 lakhs and Rs. 4 lakhs. As regards the shares of the various competing countries in the total import trade in machinery and millwork, Germany improved her position during the year from 6·4 to 9·5 per cent., chiefly at the expense of the United Kingdom and the United States, whose shares dropped from 76·5 and 11·3 to 74·9 and 9·9 per cent. respectively; but the United Kingdom, it will be seen, still holds the predominating position in this trade.

Conditions in the sugar market remained abnormal throughout 1929-30. The report of the Economic Committee of the League of Nations, which was published in August 1929, reviewed the whole position of the industry during the previous 30 years, and its conclusions are worth summarizing. The chief fact upon which the Committee laid emphasis was that the industry had been for some time suffering from an excess of production and consequently from low prices; and since consumption of sugar had been growing since 1918 at the rate of nearly 4½ per cent. per annum, as compared with a figure of 3 per cent. for several decades before the War, the difficulties of the trade clearly could not be attributed to failure of demand. The Committee stressed the fundamental importance of this point, for while those responsible for the supply of sugar could, if they wished, directly influence output, they can only indirectly influence consumption. It was, therefore, realised that the only solution of the problem must lie in concerted action on the part of the producers. Attempts to achieve this during the year, however, proved abortive, and the position in the market became even more unhealthy than before, despite the fact that world production was estimated to have been not quite so great, the figure being 26,887,000, as against 27,347,000 tons. The production of all the main producing countries was indeed slightly lower, but the fall was too slight to have any appreciable effect upon the market under the generally depressing

circumstances that prevailed; prices in fact declined steadily throughout the year, the opening price of Sugar Java 25 D. S. in Calcutta at the end of March 1929 having been Rs. 9-11 per bazar maund, and the closing price, 11 months later, about Rs. 8-2. From the 1st of March 1930 the Indian import duty on sugar was increased by Rs. 1-8 per cwt., but the duty, as enhanced, compared favourably with that prevailing in most European countries. As regards imports of sugar of all sorts to India during the year, these,—excluding molasses,—increased from 869,000 to 940,000 tons, but there was a distinct decline in value owing to the lower prices, the 1928-29 figure having been Rs. 15,86, and the 1929-30 figure Rs. 15,51 lakhs. The increase in imports was due entirely to the enormous in-take of beet sugar from Europe, which amounted to 131,000 as against a mere 8,000 tons in the previous year. The United Kingdom sent 45,000 tons valued at Rs. 78 lakhs as compared with 3,000 tons valued at about Rs. 7 lakhs in 1928-29, and imports from Hungary, Germany and Czecho-Slovakia, although not so extensive as those of the United Kingdom, also increased substantially. On the other hand imports of sugar 16 D. S. and above declined from 860,000 to 807,000 tons. The main decrease was in imports from Java. Imports from Ceylon also declined, while those from the United Kingdom and China (including Hongkong) increased. The imports of molasses during the year, which came almost wholly from Java, increased from 68,600 tons valued at Rs. 23½ lakhs to 71,800 tons valued at Rs. 26¼ lakhs. Re-exports of sugar from India decreased from 10,200 tons valued at Rs. 23⅓ lakhs in 1928-29 to 7,300 tons valued at Rs. 17 lakhs in 1929-30. The shares of Kenya Colony and Iraq increased, while that of Arabia declined. A few figures must be given, before we conclude this paragraph, concerning the output of sugar in India itself during the year, with which the import figures are necessarily related. Something, of course, has already been said on the subject of the Indian sugarcane production in Chapter III. The total area under sugarcane in this country in 1929-30 was 2,515,000 acres, and the total production of raw sugar or *gûr* was 2,761,000 tons as compared with 2,704,000 tons in 1928-29. The production of sugar by modern factories and refineries in India during 1928-29, amounted to 99,000 tons, as compared with 120,000 tons in 1927-28. As regards exports of Indian sugar, these declined during the year from 644 to 275 tons,

which included 118 tons of unrefined sugar. There was also a falling off in exports of molasses, including palmyra and cane jaggery, from 1,448 to 1,069 tons,—986 tons of which were despatched from Madras. Shipments to Ceylon amounted to 978 tons.

Fifth on the list of imports comes mineral oils. It need scarcely be explained,—since the fact is widely known, and has been emphasized in our previous Reports,—that for several years past the production of this commodity throughout the world has been excessive. In 1929, with the exception of Mexico, all the producing countries increased their output to an extent which was altogether beyond the world's requirements, and although attempts at restriction were made in the United States toward the end of the year, other countries,—some of which are potentially very prolific producers,—did not follow suit nor view these activities with favour. The total imports of all kinds of mineral oils into British India rose in amount during the year from 242 to 253 million gallons, and in value from Rs. 10,70 to Rs. 11,04 lakhs. Of the total quantity imported, kerosene oil represented 42 per cent., fuel oils 44 per cent., and lubricating oils 10½ per cent. As regards kerosene oil, the imports of this commodity into India have gone steadily ahead since 1927-28, and made a new record each year. The 1929-30 imports amounted to 106½ million gallons as compared with 104½ million gallons in 1928-29 and 94 million gallons in 1927-28. Conditions in India, where about 90 per cent. of the population lives in scattered villages, are of course particularly favourable for the use of kerosene for lamp oil, and in fact this country ranks, after the United Kingdom and China, as the third largest world importer of this oil,—besides obtaining vast quantities also from Burma. Coastwise imports from Burma into India proper during the year amounted to no less than 125 million gallons as compared with 93½ million gallons in 1928-29. Of the foreign supplies to India, the United States increased her contribution from 14 to 23 million gallons, while the receipts from Russia,—including Georgia and Azerbaijan, which for the first time sent 7¼ million gallons in 1929-30,—fell from 43 to 37 million gallons. Persia reduced her supplies from 32 to 29 million gallons, while the imports from Borneo, Sumatra, and the Celebes Islands, including consignments from the Straits Settlements, totalled 17 as compared with 16 million gallons in 1928-29. Imports of fuel oils also reached a record figure during the year and amounted to

110 as compared with 104 million gallons in 1928-29. The demand from Bombay, which had fallen away during 1928-29 owing to the cotton mills having remained closed for a considerable part of the year, recovered from 41 to 50 million gallons. Imports of these oils were, as usual, obtained mostly from Persia, which supplied 80 million gallons, or 73 per cent. of the total quantity imported, as compared with 81½ million gallons or 79 per cent. in the preceding year. Shipments from Borneo increased from 15½ to 18 million gallons, and those from the Straits Settlements from 6½ to 11 million gallons. During the year under review there was great activity on the part of agents of American oil companies in pushing the sale of their motor spirits in India. By arrangement with the Burma Shell Oil Storage and Distributing Company, the Standard Oil Company of New York installed a number of petrol pumps in Calcutta, and proposed to extend these facilities to other parts of India,—which they have since done. Imports of petroleum dangerous flashing below 76° F.,—including petrol, benzine, and benzol,—which had been below 200,000 gallons in the preceding two years rose to over 4½ million gallons in 1929-30, of which 2 million gallons came from the United States of America and 1·6 million gallons from the Straits Settlements. Coastwise imports of petrol and other motor spirits from Burma into India proper also increased from 45 million gallons in 1928-29 to 56 million gallons in 1929-30. As regards lubricating oils, imports of batching oils decreased in quantity from 16½ to 16 million gallons, but higher prices caused the value to rise from Rs. 81 lakhs to Rs. 87½ lakhs. As usual, the trade was practically divided between Borneo and the United States, but while the former increased her share from 9 to 10 million gallons, the latter reduced hers from 7 to 5½ million gallons. Imports of other lubricating oils were similar in quantity to those of the preceding year and amounted to about 11 million gallons,—though they declined in value to Rs. 1,30½ lakhs. Over 9 million gallons came from the United States and the remainder from the United Kingdom and Sumatra. Imports of the remaining types of mineral oils not classifiable under any of the former heads decreased during the year from 6 million gallons to 5 million gallons, of which white oil, imported chiefly from Germany, accounted for 3 million gallons.

Motor vehicles remained sixth on the list of imports. In the beginning of the year it was anticipated that the number of cars

imported in 1929-30 would equal, if not surpass, the record figures of the preceding year; and during the first six months it actually amounted to 8,969 as against 7,744 in the corresponding period of 1928-29. During the latter half of the year, however, owing to the financial crisis in the United States, the supplies from that source were reduced, and in the final month only 816 cars were received, which was the lowest figure for any one month in the previous three years. As a result, the total imports of the year declined in number from 19,567 to 17,399, and in value from Rs. 4,21 to Rs. 3,76 lakhs. About 68 per cent. of the cars imported came from the United States and Canada, and 21 per cent. from the United Kingdom, as compared with 74 and 19 per cent. respectively in the preceding year. The average value of cars acquired from the United Kingdom dropped from Rs. 2,676 to Rs. 2,569 and that of cars from the United States from Rs. 2,150 to Rs. 2,030; Canadian cars, however, showed an average value of Rs. 1,800 as against Rs. 1,640, in the preceding year. These figures suggest that the medium-powered car is giving place, on the one hand, to more powerful vehicles, generally of American origin, and, on the other hand, to light cars. Although the imports of British cars increased from 3,645 to 3,758 in number they declined in value from Rs. 97½ lakhs to Rs. 96½ lakhs; but imports from the United States fell both in number and value, the figures being 10,145 and 9,260, and Rs. 2,17 and Rs. 1,95 lakhs respectively. Similarly, imports of Canadian cars amounted to 2,318 valued at Rs. 42 lakhs as compared with 4,366 valued at Rs. 72 lakhs in 1928-29; but the decrease here is more apparent than real, for since the establishment by the General Motors Corporation of an assembly plant in Bombay, certain makes of cars which were, prior to September 1928, imported as 'set up' units from the Canadian factories have been imported in a 'knocked down' state from the United States works and registered as imports from the latter country. Imports from France and Italy during the year, however, showed substantial increases. As regards the geographical aspect of the import trade, the existence of the new assembly plant in Bombay has caused the proportion of cars received in that Province to increase. Of the total number imported during the year 8,728, as against 6,705, were received in Bombay, 3,247 as against 5,577 in Bengal, 1,633 as against 2,178 in Sind, 2,655 as against 3,399 in Madras, and 1,136 as

against 1,708 in Burma. The rapid development of road transport in this country during recent years has not only stimulated the imports of ordinary cars, but also greatly increased the demand, particularly in rural India, for motor omnibuses, vans and lorries, which reached a total of 15,306 valued at Rs. 2,42 lakhs in 1929-30 as compared with 12,790 valued at Rs. 2,17 lakhs in 1928-29. About 97 per cent. of this total came from America, and 2·6 per cent. from the United Kingdom, as compared with 95 and 3·7 per cent. respectively in 1928-29. As regards the American imports, those from the United States rose from 7,572 to 12,017 in number and from Rs. 1,29 to Rs. 1,76 lakhs in value, while those from Canada, owing to the change in the system of registration already mentioned, dropped from 4,610 valued at Rs. 61 lakhs to 2,799 valued at Rs. 46 lakhs. The number of such vehicles imported from the United Kingdom was 398 valued at Rs. 17½ lakhs as against 473 valued at Rs. 20½ lakhs in the preceding year. The average declared value of chassis imported from the United Kingdom was Rs. 4,291 as compared with Rs. 1,653 for the American makes, the corresponding figures for the preceding year having been Rs. 4,083 and Rs. 1,572. As regards motor cycles, the imports rose during the year by 8 per cent. both in number and value, from 1,802 valued at Rs. 10 lakhs to 1,956 valued at Rs. 11 lakhs. The United Kingdom has what amounts almost to a monopoly in this trade and sent 1,842 machines or 94 per cent., as against 1,611 or 89 per cent. in the preceding year. The remainder came chiefly from the United States, Germany and France, all of which reduced their supplies. The total number of all classes of motor vehicles registered in the different Provinces of British India up to the end of March 1930 was 192,690 as against 172,680 twelve months previously.

As regards the other, less valuable, groups of imports, the movements during the year were comparatively unimportant. Grains, pulses, and flour, which had held the seventh place in the 1928-29 list with a declared value of Rs. 10,73 lakhs, fell back to the eighth owing to the somewhat improved yield of the wheat crop in Northern India, which reduced the combined value of imports under this head to Rs. 5,42 lakhs. Provisions and oilman's stores accordingly rose to seventh in the list, though the value of this group was also less than in the previous year and amounted to only Rs. 5,64 lakhs. There were somewhat surprising move-

ments under liquors, whose value increased from Rs. 3,57 to Rs. 3,77 lakhs, which is the highest figure reached for many years. Imports of rubber and manufactures thereof were also larger, the total declared value being Rs. 3,33 as against Rs. 2,86 lakhs in 1928-29, the advance being largely accounted for by greater imports of pneumatic motor-tyres. The trade in artificial silk, whose expansion was so remarkable a feature of 1927-28, but which received a set-back in the subsequent year, remained unsatisfactory, the quantity imported being only slightly more than in 1928-29 and the value a good deal lower.

We may now turn to a detailed consideration of India's exports during the year 1929-30. Jute and its manufactures again took first place on the list. The total outturn of the crop in India in 1929 was 9·8 million bales, as against 10 million bales in 1928. This decline was almost entirely due to the serious floods in Assam which we described in our last Report, for the yield of the Bengal crop, by itself, showed some improvement. The short-crop propaganda initiated by the Congress Party in the previous year was continued during the 1929 season, but evidently had little effect, since the total area sown was actually greater than before. But the fact that, despite this, the yield of the crop as a whole was less, and that the Indian Jute Mills Association decided during the year to increase their working hours from 54 to 60 per week, would undoubtedly in a normal year have improved the position of raw jute in the world's markets. That this did not take place was due, of course, to the general economic depression. Prices for raw jute declined steadily and substantially throughout the period under review, the quotation having been Rs. 66 per bale for "firsts" in April 1929 and Rs. 44-8 in the following March. Moreover the demand for manufactured jute remained extremely unsatisfactory, owing to the unfortunate coincidence in time of a general decline in trade with an increase in production resulting from the rise in working hours; in particular the almost universal curtailment in movements of grains and sugar had a most depressing influence on the markets for gunny bags and cloth. According to trade reports, the world was actually consuming less manufactured jute than what used to be normally produced by the mills working only 54 hours a week. Throughout the greater part of 1929-30 the loss caused by the decline in prices fell mostly on the middlemen, as is proved by the fact that the profits of jute

mills in 1929 only declined from Rs. 7·23 to Rs. 6·26 crores; but later some difficulty began to be experienced by the mill-owners in making large forward sales. As a first step towards curtailing production, the Indian Jute Mills Association decided, from the 1st of July 1930, to revert to a 54-hour working week for a period of eighteen months; and subsequently it was resolved to close the mills for one week each month, until the 31st of March 1931. The number of looms at work in mills within the membership of the Indian Jute Mills Association on the 1st of January 1930 was 50,297 as against 50,041 twelve months before. The total weight of raw and manufactured jute exported during the year amounted to 1,765,000 tons, which was 44,000 tons less than in the preceding year; and the total value declined from Rs. 89 to Rs. 79 crores. Raw jute accounted for 34 per cent. of the value, that is to say Rs. 27 crores, and jute manufactures for 66 per cent., or Rs. 52 crores, as compared with 36 and 64 per cent. respectively in the preceding year. Germany, as usual, was the largest customer for raw jute, her takings amounting to 1,212,000 bales valued at Rs. 7,41 lakhs; in the preceding year, however, her imports were much larger, namely 1,457,000 bales valued at Rs. 8,96 lakhs. Exports to the United Kingdom declined from 1,130,000 bales valued at Rs. 7,57 lakhs to 923,000 bales valued at Rs. 5,56 lakhs, and those to France, which did not decline as much as those to Germany and the United Kingdom, amounted to 596,000 bales valued at Rs. 3,62 lakhs as against 616,000 bales valued at Rs. 4,05 lakhs. The United States took 445,000 bales valued at Rs. 2,52 lakhs as against 525,000 bales valued Rs. 3.44 lakhs in 1928-29; exports to Italy fell from 340,000 bales valued at Rs. 2,28 lakhs to 307,000 bales valued at Rs. 1,90 lakhs; and a similar decline was noticeable in the case of Belgium, whose takings were reduced from 308,000 bales valued at Rs. 1,90 lakhs to 259,000 bales valued at Rs. 1,54 lakhs. On the other hand, a number of other countries whose imports during the previous year had been on a smaller scale, such as Spain, the Netherlands, Japan, Egypt, and Brazil, increased their purchases during 1929-30 considerably. As regards manufactured jute, the total exports of gunny bags increased in number from 498 to 522 millions, the value, however, declining from Rs. 25 to Rs. 22 crores. Shipments of sacking gunny bags increased in number from 411 to 427 millions but fell in value from Rs. 22 to under Rs. 19 crores. On the other hand, Hessian

gunny bags,—a smaller item,—increased both in number and value from 87 millions valued at Rs. 2,92 lakhs to 95 millions valued at Rs. 3,01 lakhs. Of the total exports of gunny bags, the United Kingdom took 53 as against 44½ millions in the preceding year; but Australia, as usual, remained the best market, despite the fact that her takings decreased from 91 to 73 millions. Java's share decreased from 42 to 37 millions, and that of Chile and Peru together from 45 to 43 millions, but purchases by China developed remarkably and totalled 43 as against 25 millions in the previous year. Among other countries whose takings increased were the Straits Settlements, the Union of South Africa, Portuguese East Africa, Egypt, and Hawaii; but Siam and Indo-China took considerably less. New Zealand's purchases were approximately the same as in the previous year. Turning now to gunny cloth, the exports of this commodity increased from 1,568 to 1,651 million yards, but the value declined from Rs. 31⅔ to Rs. 29⅔ crores. Shipments of Hessian gunny cloth increased from 1,503 to 1,599 million yards, but those of sacking gunny cloth declined from 65 million yards to 52 million yards. Of the total exports the United States absorbed 1,072 million yards, about 50 million yards more than in the preceding year; the value however, declined from Rs. 19⅔ to Rs. 18¼ crores. The Argentine took 329, as compared with 340 millions yards, the decline in value being from Rs. 7⅓ to Rs. 6½ crores. Exports to Canada increased from 76 to 82 million yards, and the United Kingdom more than doubled her share from 29 to 59 million yards. Australia, the Union of South Africa, and the Philippine Islands all took larger quantities; purchases by Uruguay and New Zealand remained at about the same level as in 1928-29; and shipments to China decreased.

We now turn to cotton and cotton manufactures, which again took second place on the list of exports. Before analysing the year's figures, however, we must point out that owing to the intimate connection between the import and export trades in cotton manufactures, our remarks in this paragraph will appear incomplete unless readers consider them in relation to what we have said on the subject of imports on pp. 308—316. The Indian cotton crop in 1929-30 was smaller than in the previous year, being estimated at 5,125,000 as compared with 5,782,000 bales of 400 lbs. The American crop, on the other hand, showed an increase, and amounted to the equivalent of 18,535,000, as against 18,097,000

bales; and the Egyptian crop was also slightly better, the estimate being 2,062,000 as compared with 1,943,000 bales. Taking the year as a whole, the prices of American cotton, with which the Indian prices usually move in sympathy, were distinctly lower than in the previous year, although this depreciation was not justified by the history of the year's crop. To a great extent, the fall was due to the competition of what are called "outside growths", for there is evidence that the American crop is deteriorating in quality, owing, in a large measure, to the decline of staple cotton in Texas. In consequence, Lancashire spinners have been forced to look elsewhere for good quality, particularly to Brazil, the Argentine, and Uganda; and even American spinners, alarmed by the recurring high prices of American cotton, have been forced to search for substitutes. Nevertheless, during the first half of the year under review, the prices of American cotton were fairly steady and generally high, ranging around 10½*d.* between April and September. This was due to the operation of three factors, namely unfavourable weather conditions in the early part of the year, reports of serious depredations by the boll-weevil, and the increased consumption of cotton in America during the first half of the financial year. In the second half, however, the emergence of two new factors exerted a depressing influence on the price of American cotton. These were, in the first place, the deterioration in the quality of the American crop, a large proportion of which was found to be unsaleable owing to the damage caused by the weather and insect pests. This meant greater competition from the "outside growths" and a consequent reduction in the price. The other factor was the crisis in the New York Stock Exchange in November, which suggested the probability of a decline in the consumption of cotton owing to restriction in industrial activity. In consequence, the price, which had stood at 10·58*d.* at the end of August, declined steadily during subsequent months, and on the 14th of March was only 8·05*d.* Indian prices, as is usual, generally followed the trend of American prices during the year, except that the fall here was slightly greater, owing to the fact that the home consumption during the previous year had been greatly curtailed owing to the labour disputes in the Bombay mills. In consequence, the parity was in favour of Indian cotton, and the exports of the raw article from India during 1929-30 were therefore substantially larger than in the previous two years.

The total exports from India during the year amounted to 4,070,000 bales, as compared with 3,712,000 in 1928-29 and 2,686,000 in 1927-28. Owing to the decline in the price, however, these increased exports were valued only at Rs. 65 crores as compared with Rs. 66 crores in 1928-29. On the other hand, the fact was significant and encouraging that the increase in India's exports was shared by most of her customers and was not confined to any particular country. Japan, as usual, was the largest purchaser, and took 1,640,000 bales valued at Rs. 27 crores as compared with 1,610,000 bales valued at Rs. 29 crores in 1928-29. China, the next biggest customer, increased her share from 403,000 bales valued at Rs. 7·3 crores to 566,000 bales valued at Rs. 9·3 crores. Italy's takings also rose from 384,000 bales valued at Rs. 6·6 crores to 393,000 bales valued at Rs. 5·8 crores, and exports to Germany increased from 324,000 to 344,000 bales, the value, however, falling from Rs. 5·7 to Rs. 4·9 crores. Exports to Belgium decreased from 347,000 bales valued at Rs. 6·2 crores to 341,000 bales valued at Rs. 5·6 crores. The United Kingdom took 270,000 as compared with 241,000 bales, but their value declined from Rs. 4·4 to Rs. 4·3 crores. France increased her purchases from 204,000 bales valued at Rs. 3·6 crores to 253,000 bales valued at Rs. 3·9 crores, and the United States took 81,000 bales valued at Rs. 1·2 crores as compared with 47,000 bales valued at Rs. 77 lakhs. The Netherlands and Spain also increased their takings. Exports from Bombay amounted to 64 per cent. of the total quantity of raw cotton exported from India, those from Karachi to 28 per cent., and those from Madras to 6 per cent., as compared with 71,22, and 4 per cent. respectively in 1928-29. As regards exports of Indian manufactured cotton goods, the situation during the year, as we have indicated, was far from satisfactory, owing to the labour disputes in the Bombay mills and the severity of Japanese competition. As regards yarn, the production in Indian mills increased greatly, as we have mentioned, but the export trade in this item, as compared with that in piecegoods, is small. The quantity despatched abroad during the year amounted to 24·6 million lbs., which represented an increase of ¼ million lbs. over the figures for 1928-29; but the average exports in the five years ending 1913-14 were as high as 193 million lbs., and even those in the post-war quinquennium amounted to 82 million lbs. Moreover the value of the yarn exported was Rs. 6 lakhs less

than in the previous year and amounted to Rs. 190 lakhs only. As in the preceding year, exports to China were comparatively small and actually declined somewhat. Exports to other countries more or less maintained their position, the only important change being that of Persia, whose takings increased from 3·2 to 4·2 million lbs. Turning now to piecegoods, while the production in Indian mills increased by 28 per cent., the quantity exported declined from 149 million yards valued at Rs. 5,37 lakhs to 133 million yards valued at Rs. 4,67 lakhs. As in the preceding year, the largest single customer was Persia which, however, took only 18·9 million yards, as compared with 23·8 million yards in the preceding year. The trade with that country, as has been remarked in previous Reports, has recently been steadily declining owing to severe competition from the European countries which serve it from the North and West. In 1926-27 Indian exports to Persia amounted to no less than 38 million yards. For similar reasons exports to Iraq have also been declining, and amounted in the year under review to 12·9 million yards as compared with 18·7 million yards in 1928-29, 24 million yards in 1927-28 and 38 million yards in 1926-27. There was also deterioration in the exports to the Straits Settlements, Tanganyika Territory, Aden and Dependencies and the Bahrein Islands, the respective decreases being from 19·7, 12·5, 5·5, and 5·4 million yards in 1928-29 to 17·9, 11·2, 4·0 and 4·2 million yards in 1929-30. On the other hand, exports to Ceylon rose from 17·8 million yards in 1928-29 to 18·8 million yards in 1929-30. Shipments to Kenya Colony, Arabia and Mauritius also improved slightly. Of the total exports during the year, grey goods accounted for Rs. 44 lakhs, coloured goods for Rs. 4,19 lakhs and white goods for the remainder.

Exports under the heading foodgrains and flour, which normally takes third place on the list, went up considerably in the year under review. The increase however was due entirely to larger exports of rice, and exports of other kinds of foodgrains decreased. The total quantity of foodgrains and flour exported amounted to 2,510,000 as against 2,300,000 tons, and their value to Rs. 34,79 as against Rs. 33,69 lakhs. The shipments of rice, which accounted for 93 per cent. of the total exports as compared with 79 per cent. in the preceding year, increased from 1,816,000 to 2,326,000 tons. On the other hand, exports of wheat fell from 115,000 to 13,000 tons, those of wheat flour from 54,000 to 51,000

tons, those of barley from 138,000 to 6,000 tons, those of pulse from 114,000 to 97,000 tons, and those of *jowar* and *bajra* from 42,000 to 15,000 tons. There were practically no exports of maize. It will thus be seen that exports of flour and foodgrains other than rice declined by no less than 300,000 tons.

As regards rice, although the production of cleaned rice in 1929-30 was 1·32 million tons less than in 1928-29, exports of rice and paddy together increased by 510,000 tons. Of the important rice-growing provinces, Burma alone possesses a large exportable surplus, and her exports in 1929-30 amounted to 2,048,000 tons, as compared with 1,538,000 tons in the preceding year, which represented 88 per cent. of the total foreign exports from India. Bengal contributed 5 per cent. and Madras 4 per cent. Exports from India (including Burma), formed 7·5 per cent. of the total estimated production as compared with 5·6 per cent. in 1928-29. Prices of rice during 1929-30 were generally much lower than in 1928-29, though at one period they easily surpassed the maximum recorded in that year. From the beginning of April until the first week of October they were consistently on the increase, and rose from Rs. 370 to Rs. 460*; they then declined continuously, reaching the very low level of Rs. 325 at the end of February. In March, however, an upward movement again started, which continued to the end of the financial year and projected into the year 1930-31. At the end of March the figure was Rs. 350. It may be of interest to study the causes of these movements. The rise between April and October was due mainly to the fact that the surpluses available for export in the three chief exporting countries, namely Burma, Siam, and Indo-China, were much smaller than the actual exports in the two preceding seasons. The exportable surplus of Burma from the crop of 1928-29 was 2,600,000 tons, as compared with a total 2,717,000 tons from that of 1927-28, and the decline in the Siamese and Indo-Chinese surpluses was so substantial that the trade was estimating a net decline of 776,000 tons in the balance available for export from the three countries together. Between January and July 1929, heavy shipments induced by this exceptionally favourable statistical position caused a depletion of the available surpluses in all the three countries, though those of Siam and Indo-China were reduced much more than that of Burma,

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* The prices quoted are for big mills specials, per 100 baskets, each of 75 lbs., in the Rangoon market.

Apart from this, which was the main reason for the rise in prices, there were other factors which contributed to the same end by increasing the demand, especially for Burma rice. News of floods in Assam in June and July, and reports received in August and September of famine in China and scarcity in Java gave a strong impetus to exports, and there were heavy buyings of Burmese rice on account of both these markets towards the close of the year. Moreover there was a marked improvement in the European demand, mainly owing to the high prices required for American, Italian and Spanish rice at that time. Again, the propaganda carried on in the United Kingdom by the Empire Marketing Board as well as by the High Commissioner for India proved very effective in popularising the Indian commodity. All these factors helped to create a better demand for Burma rice and thus contributed to the rise in prices. As regards the subsequent fall, this was due mainly to the fact that from October onwards the new crop, which was reported to be good, if not excessive, was beginning to make its influence felt in all the markets. In Burma, the forecast indicated a substantially larger outturn than in the previous year, the exportable surplus being estimated at 2,747,000 tons as compared with 2,600,000 tons in 1928-29 and 2,717,000 tons in 1927-28. Further, there were reports of considerably larger exportable surpluses both in Siam and Indo-China, the former being estimated in December at 1,750,000, as compared with 1,150,000 tons, and the latter at 1,350,000 as against 1,200,000 tons available from the previous crop. These large increases in the estimated surpluses would naturally have caused prices to fall in any case, and the fall was accentuated by the onset of the general trade depression throughout the world at approximately the same time. The rise in prices which eventually set in again after February 1930 was due partly to the fact that the actual exportable surpluses both in Siam and Indo-China were proving to be considerably below the estimates, and partly to the development of an unexpected buying movement in the Far East. During February and March the takings of China amounted to 197,000 tons, the total for the whole year being only 260,000 tons, while Java took 79,000 tons in these two months and 17,000 tons in January, that is to say 96,000 tons in three months out of a total of 155,000 tons for the whole year. And not only were the purchases of Indian rice by these two countries during the early part of 1930 sur-

prisingly large, but they were also substantially above the average for the whole year. China's purchases in 1928-29, were only 62,000 tons, as against the total of 260,000 for 1929-30, while Java's takings, which, as we have already mentioned, amounted to 155,000 tons in 1929-30, were a mere 43,000 tons in 1928-29. These immense increases by themselves accounted for much of the expansion in Indian exports during the year. In addition, however, four other Asiatic countries,—namely the Federated Malay States, the Straits Settlements, Sumatra, and Ceylon,—all purchased substantially larger amounts, the increases being 21,000, 75,000*, and 9,000 respectively. On the other hand Japan, Korea and Formosa decreased their respective takings by 4,000, 2,000 and 8,000 tons. Taking Asia as a whole, however, it will be seen that it accounted for an increase amounting to about 401,000 tons. Coming to the European zone, the largest increase was in shipments to the United Kingdom, which rose from 35,000 to 79,000 tons. Germany, whose purchases have always been on a much larger scale, took 251,000 tons as compared with 208,000 tons in the preceding year; and the Netherlands' share was also larger, the figure being 99,000 as against 76,000 tons. Exports to Spain, Italy, and Fiume however declined by 24,000, 19,000 and 4,000 tons respectively; nevertheless Europe, as a whole, increased her takings by no less than 82,000 tons. As regards other countries, Egypt, Cuba, and the West Indies increased their takings by 10,000, 10,000, and 12,000 tons respectively, while exports to the United States, Australia, and New Zealand were, in the aggregate, 6,000 tons less. Taking a general view of the rice export trade, it is clear that, during the year under review, India was recapturing the European market and more than holding her own in the Asiatic markets. It must be emphasized, however, that this gratifying state of affairs was largely due to exceptional and temporary factors, such as the existence of famine in China and scarcity in Java, Malaya, and the Straits Settlements, the increase in the surplus available for export overseas in Burma, owing to the diminution of purchases from India proper,—she took 151,000 tons less than in 1928-29,—and the exceptional slump in prices during the latter part of the year, which encouraged European countries to take more from the Burma market. Moreover certain

* Taking the Straits Settlements and Sumatra together.

definitely adverse influences developed, which are likely to prove serious in the future. The Japanese market, for instance, is, it would now appear, permanently lost to India, since the Government there shows no inclination whatever to remove the embargo on imports of rice which it established in 1928. It is therefore unfortunately a fact that, despite the encouraging events of the year, really healthy conditions were not established in the rice export trade, though there was a feeling that some advantage might be derived in future from the Government's decision, during the latter part of 1929-30, to reduce the export duty on rice from 3 annas to 2 annas, 3 pies,—a change which was discussed in some detail in Chapter VII of our previous Report.

As regards foodgrains other than rice, the most important is wheat. Remarks concerning the export trade in this commodity have already been made in various parts of this Chapter, but to make the picture complete, so far as the year 1929-30 is concerned, we must recapitulate and supplement them here. The total area under wheat in India during 1928-29 was 32 million acres, which was 1 per cent. less than the acreage reported in 1927-28. The weather, however, was better than in the preceding year and the total outturn, therefore, higher, though it was considerably less than that of most of the post-war crops. As regards the trend of prices during the year, this, on the whole, as in the case of most other commodities, was markedly downward. In the Karachi market the quotation for white wheat per candy of 656 lbs. stood at Rs. 45-8 at the beginning of April, and by the third week in June had touched Rs. 36-8. Thereafter it rose slightly, and two months later reached Rs. 42-10; but subsequently, except for a slight rally during December and the beginning of January, the decline was continuous, and by the 11th of March the quotation was Rs. 34. Of the total exports of wheat during the year,—which, as we have seen, amounted to 13,000 tons valued at Rs. 21 lakhs as against 115,000 tons valued at Rs. 1,69 lakhs in 1928-29,—the United Kingdom took 7,000 tons and Arabia 2,300 tons. As regards the imports, which amounted to 357,000 tons valued at Rs. 4,98 lakhs as compared with 562,000 tons valued at Rs. 8,17 lakhs in 1928-29, 94 per cent. of the total, that is to say 336,000 tons, was sent by Australia, the remaining 6 per cent. being chiefly composed of supplies from Canada, Iraq, and the Argentine. The foreign consignments were received mainly in Bengal, Bombay and Sind, their respective shares

being 186,000, 130,000 and 31,000 tons. Turning now to wheat flour, exports during the year declined from 54,000 tons valued at Rs. 116 lakhs to 51,000 tons valued at Rs. 1,07 lakhs. The largest market was Arabia, which took 13,300 tons, as compared with 11,400 tons in the preceding year. On the other hand, Egypt, which took a slightly larger quantity than Arabia in 1928-29, reduced her takings from 11,800 to 6,800 tons, and exports to Aden and Dependencies declined from 7,800 to 6,000 tons. Exports to Kenya Colony and Zanzibar and Pemba however increased from 5,900 to 6,600 tons, while those to the Straits Settlements and Mauritius and Dependencies were almost the same. Small quantities were also exported to Iraq, the Anglo-Egyptian Sudan, and Persia. Finally, before concluding this paragraph, we must give some indication of the trend of trade during the year in foodgrains other than rice and wheat. The total exports under this head declined in quantity from 314,000 to 121,000 tons and in value from Rs. 4,37 to Rs. 200 lakhs, the largest decrease being in the case of barley, exports of which declined from 138,000 tons valued at Rs. 1,65 lakhs to 6,000 tons valued at Rs. 7 lakhs, owing chiefly to the bumper maize and barley harvests obtained in Europe, which normally absorbs almost the whole of the exports of the Indian commodity. Shipments of *jowar* and *bajra* also declined from 42,000 tons valued at Rs. 67 lakhs to 15,000 tons valued at Rs. 25 lakhs. Exports of beans fell from 36,000 to 32,000 tons, those of gram and lentils from 14,000 tons each in 1928-29 to 11,500 and 13,600 tons respectively in 1929-30, and those of other sorts of pulses from 50,000 to 40,000 tons.

As in the preceding year, oilseeds occupied the fourth place among India's exports during 1929-30, but the total shipments amounted to only 1,195,000 tons valued at Rs. 26,46 lakhs as against 1,328,000 tons valued at Rs. 29,61 lakhs. In 1928-29, the year prior to the one now under review, the production of groundnuts in India reached the record figure of 3,211,000 tons, but in the subsequent season it declined to only 2,475,000 tons. Exports fell, the figure being 714,000 as against 788,000 tons. France and Germany, the two principal customers for Indian groundnuts, reduced their takings from 216,000 and 241,000 tons to 211,000 and 210,000 tons respectively, while exports to Italy amounted to only 55,000 tons, as against 121,000 tons in the previous year; Spain practically dispensed with Indian supplies altogether. One

of the reasons for the particularly abrupt decline in the purchases of Spain and Italy was the exceptionally heavy yield of the world's olive harvests during 1929; for although this crop does not as a rule play an important part in the international market, production on this occasion was so great as to turn the scale against other competing commodities, particularly in the Mediterranean region where olive oil is produced. On the other hand, exports of groundnuts to the United Kingdom increased from 48,000 to 53,000 tons during the year, and those to the Netherlands and Belgium together from 142,000 to 162,000 tons. About 82 per cent. of the total quantity of groundnuts shipped in 1929-30 went from Madras and 18 per cent. from Bombay, as compared with 74 and 26 per cent. respectively in the preceding year. The prices of groundnuts on the whole declined during the year, the quotation in Madras being between Rs. 44 and Rs. 46 per candy of 500 lbs. in April 1929, and between Rs. 39 and Rs. 43 in March 1930. The Indian linseed crop during the year, largely as a result of the excessive cold and rain in February 1929, was small, being estimated at 322,000 tons as compared with 348,000 tons in 1927-28. Nevertheless, exports rose from 157,000 to 248,000 tons owing to a shortage of supplies in other producing countries. The Argentine crop was adversely affected by the weather conditions and its yield exceptionally meagre; and smaller production was also reported from the United States and Canada. In consequence, both the demand and the prices for Indian linseed were higher than in the previous year. The United Kingdom took 80,000 as compared with 18,000 tons; France, 51,000 as against 47,000; Italy, 28,400 against 27,800; Belgium, 13,000 against 2,000; Germany, 10,000 against 6,000; and the Netherlands, 7,000 against 400 tons. Spain's purchases remained practically unchanged at 7,000 tons. Exports to Japan fell from 20,000 to 10,000 tons, but Australian purchases amounted to 23,000 as compared with 22,000 tons. An interesting event was the despatch of 2,000 tons of Indian linseed, for the first time since 1925-26, to the United States, which normally draws upon the Argentine to supplement her own domestic supplies. As a result of the favourable circumstances, the value of the linseed exported during the year was Rs. 5,72 lakhs, as against Rs. 3,31 lakhs in the preceding year, which was a very satisfactory increase; it was indeed the only bright spot in the whole of the oilseed trade, since exports of all other varieties declined

substantially. Shipments of castor seed during 1929-30 amounted to 106,000 tons valued at Rs. 2,15 lakhs as against 121,000 tons valued at Rs. 2,46 lakhs in the previous year. As usual, the United States was the largest purchaser, but she reduced her takings from 56,000 to 51,000 tons; and the United Kingdom took 25,000 as against 27,000 tons. Shipments to Italy and Belgium also declined to 6,000 and 3,500 tons respectively, while France slightly raised her purchases from 15,000 to 16,600 tons. The production of rape and mustard seeds in 1929-30 was estimated at 1,095,000 tons, or 185,000 tons more than that of 1928-29. Exports, however, fell from 77,000 to 44,000 tons. With the exception of the Netherlands and Belgium, which together took 18,000 tons as against 14,000 tons in the preceding year, all the principal purchasing countries, namely the United Kingdom, France, Germany, and Italy, considerably curtailed their requirements. In cotton seed India has a very limited overseas market, the principal customer being the United Kingdom; and as a result of the unusually good output of Egyptian cotton seed during the year, shipments of the Indian commodity declined from 131,000 to 58,000 tons, of which the United Kingdom took 98 per cent. Although India produces about 500,000 tons of sesamum annually, the export trade in this article is relatively small, the indigenous consumption being substantial; only 11,000 tons were exported during 1929-30 as compared with 30,000 tons in 1928-29. Most of the exports were despatched to the United Kingdom, the Netherlands, Italy, France, and Ceylon.

The tea industry in India during 1929-30 was in the throes of a severe depression, owing to a general over-production throughout the world. As a result, there was a serious drop in prices, which at certain periods fell definitely below the cost of production. The average price per lb. for the season 1929-30 in the tea auctions in Calcutta was 9 annas 11 pies, as compared with 11 annas 4 pies in 1928-29. Even in 1928 the world production of tea had been ahead of the preceding year's outturn by 24 million lbs., and as the climatic conditions during 1929 were universally favourable, production increased by no less than 54 million lbs. beyond the total for 1928. The total output of India during the year was estimated at 433 million lbs. as compared with 404 million lbs. in 1928 and 391 million lbs. in 1927. As usual, Assam raised the largest amount, namely 259 million lbs., while the rest of Northern India contri-

buted 116 million lbs. and Southern India 58 million lbs. The production in Assam increased by 13 million lbs., despite the damage caused there by floods, and that in other parts of Northern India increased by 15 million lbs. The total area under tea during the year was 789,000 acres as against 776,000 acres in 1928; 87 per cent. of the total production was exported overseas. The total increase in the quantity of the shipments made was 5 per cent., but their value decreased by 2 per cent. Only 465,000 lbs. of green tea were exported, the balance of 376 million lbs. consisting of black tea. Exports to the United Kingdom totalled 317 million lbs. valued at Rs. 22 crores as compared with 298 million lbs. valued at Rs. 22⅓ crores in 1928-29,—her share of India's total exports being 84 per cent. as compared with 83 per cent. in the preceding year. Re-exports of Indian tea from the United Kingdom amounted to a total of 55, as compared with 52 million lbs. Of this the Irish Free State took 18·6, as against 18·4 million lbs., and Russia 9·6, as compared with 5·3 million lbs. in 1928-29. Direct shipments to Russia also increased from 4·1 to 5·3 million lbs., the total exports of Indian tea to that country consequently amounting to 14·9 million lbs. as against 9·4 million lbs. in the previous year. From the London market other European countries together took Indian tea to the extent of 12·4 million lbs. as compared with 11·9 million lbs. in 1928-29. Re-exports from the United Kingdom to the United States decreased from 7·5 to 5·9 million lbs., though direct shipments increased from 7·8 to 8·4 million lbs., the total takings of Indian tea by the United States being therefore only 1 million lbs. less than in the previous year. Re-exports from the United Kingdom to Canada and Newfoundland decreased slightly from 5·3 to 5·2 million lbs., but here again direct shipments from India increased, and the total quantity received by Canada actually rose from 16·5 to 17·6 million lbs. Exports to China dwindled to the insignificant amount of 13,000 lbs. as compared with 6·1 million lbs. in the preceding year. Exports to Australia also declined from 5·5 to 4·6 million lbs. On the other hand, Egypt and Persia increased their shares from 3·3 and 4·2 to 5·7 and 5·6 million lbs. The share of Calcutta in the export trade during the year was 66 per cent., that of Chittagong 21 per cent. and that of Madras 13 per cent. The percentage of Indian tea included in the total imports of tea into the United Kingdom during 1929 stood at 54·8 as compared with 56·8 in 1928.

although the actual quantity received was greater by 18·8 million lbs. During the same period imports of Ceylon tea rose from 139·3 to 153·2 million lbs. and those of Java tea from 71·2 to 85·8 million lbs. In the United States the percentage of Indian tea in the total receipts fell from 17·3 to 16·5. In Canada however there was an improvement, India's share rising from 57·6 to 61·4 per cent. of the total takings, largely as a result of a decline of more than a million lbs. in imports of Ceylon tea. In Australia there was a decrease of about half a million lbs. in the imports of Indian tea, which brought down the percentage share of India from 11·6 to 10·5.

Few noteworthy changes took place in connection with the other items of export, though the decline in values was fairly general. Severe depression prevailed in the trade in hides and skins,—including leather,—owing to a marked falling off in the demands from the United Kingdom, Germany, and the United States, which are as a rule the largest purchasers, and the total value of the exports under this head declined from Rs. 18,87 to Rs. 16,03 lakhs. Exports of metals and ores, on the other hand, which come next on the list, showed a remarkable expansion, the tonnage advancing from 739,000 to 871,000, and the value from Rs. 8,92 to Rs. 10,34 lakhs. The quantity of manganese ore exported surpassed all records,—despite the fact that the United States, in which the largest quantities of this commodity are consumed, reduced her demand from India owing to arrangements recently made with Russia and to the development of the Brazilian sources of supply. The exports of pig iron also increased, largely in consequence of the re-organization carried out in the Tata Iron and Steel Works after the strike in 1928. Shipments of lac, which had improved during the previous year, were on a reduced scale, the quantity exported being 669,000 as against 743,000 cwts., and the value Rs. 6,97 as against Rs. 8,64 lakhs. The increasing employment of nitro-cellulose lacquers for paints and varnishes and of various substitutes for the natural product in the electrical trades, has restricted the uses to which lac can be put,—though the development of the gramophone industry should lead to an expansion in the demand as soon as the present depression in trade comes to an end. Of the other, less important items of export, the only noteworthy movements occurred under paraffin wax, spices,

manures, and mica, all of which withstood the general tendency towards a decline in values and registered small increases.

Apart from her overseas trade, India also carries on a relatively small, but nevertheless considerable, trade across her land frontiers, especially in the North-West and North-East. Here also exports normally exceed imports in quantity, and both, in recent years, have shown a tendency to increase; the chief items of imports are foodgrains, raw wool, hides, lac, tea, tobacco, and silk, together with a certain amount of raw jute, linseed, and rape seed received from Nepal; exports include cotton piecegoods, machinery, hardware and cutlery, mineral oils, provisions, salt, sugar, tea and bullion. Under the system of registration now in force, both in India proper and Burma, only the traffic in selected commodities at the centres through which the bulk of the frontier trade passes is recorded. There is also, of course, in addition to this overland trade, a substantial coasting trade between Burma and the other provinces of British India, but as this, at present, may be considered a matter of internal economy only, it does not require separate description here.

We have now indicated the more significant movements that have recently occurred in connection with India's import and export trades. But before concluding this Chapter in the usual way by enumerating the various cases of importance which have been dealt with by the Commerce Department, we must devote a few sentences to discussing what is known as the direction of trade, —that is, the relative movements of the shares of trade obtained by the countries competing for the Indian traffic. A good deal, of course, has already been said on this subject, *en passant*, during the course of our previous discussions. As will be realized at once from a glance at the tables overleaf, the outstanding feature of the year 1929-30, as of many years preceding it, has been the steady and continuous decline in the proportion of the import trade obtained by the United Kingdom. On the export side, her share during the year slightly increased. The percentage shares of the other parts of the British Empire during 1929-30 remained, in the aggregate, practically unchanged,—the actual figure works out at 9·5 in imports and 14 in the exports,—but the position of individual members underwent some changes. Australia's participation, for example, declined from 3·3 to 2·3 per cent. under imports and from 2·2 to 1·8 per cent. under exports, while that of the Straits Settle-

Variations in the Trade of British India with principal coutries during the last ten years as compared with averages of the pre-war, war and post-war periods.



ments rose under imports from 2 to 2·6 per cent. and under exports from 2·4 to 2·5 per cent. The British Empire, as a whole, retained 43 per cent. of India's total trade, as compared with 43·5 per cent. in 1928-29 and 52 per cent. during the pre-war quinquennium. Among foreign countries, Japan's share under imports jumped from 7·0 to 9·8 per cent., chiefly on the strength of her successful competition with other countries in the cotton and silk trade,—her share under exports remaining stationary at 10·2 per cent. Exports to the United States were at a lower level than in the preceding year, although imports showed a slight improvement. Germany's participation in the total import trade increased from 6·3 to 6·6 per cent., but smaller purchases of food-grains and oilseeds caused a drop in her share in exports from 9·6 to 8·3 per cent. The trade with France, Belgium and the Netherlands showed no marked variations. Under exports, however, Italy reduced her share from 4·5 to 3·6 per cent., while China increased hers from 2·8 to 4·1 per cent; on the import side the shares of both countries remained approximately the same. The reduction in Java's participation in the import trade from 6·5 to 5·7 per cent. was primarily due to the reduction in her shipments of sugar.

Imports.

—	1913-14.	1926-27.	1927-28.	1928-29.	1929-30.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
United Kingdom	64·1	47 8	47·7	44·7	42·8
Germany	6·9	7·3	6·1	6·3	6·6
Java	5·8	6·2	5·9	6 5	5 7
Japan	2·6	7·1	7·2	7·0	9·8
United States of America	2·6	7·9	8·2	7·1	7·3
Belgium	2 3	2·9	3·0	2 8	2·8
Austria and Hungary	2·3	·7	·5	·6	·8
Straits Settlements	1·8	2·5	2·3	2·0	2·6
Persia, Arabia, Asiatic Turkey, etc.	1·5	1·8	1·8	1·9	2·1
France	1·5	1 5	1·7	1 9	1 9
Mauritius	1·3	...	...	...	...
Italy	1·2	2·7	2·7	2·9	2·8
China	·9	1·4	1·8	1·7	1·7
Netherlands	·8	2·0	1·9	1·9	1·8
Australia	·5	·7	·8	3·3	2·3
Hongkong	5	4	·5	·3	·3
Dutch Borneo	·4	·4	·5	·5	·4
Ceylon	·4	·6	·8	·8	·7
Switzerland	·3	·9	1·1	1·0	·9
Kenya and Zanzibar	3	1·0	1·0	1·1	1·4

Exports.

—	1913-14.	1926-27.	1927-28.	1928-29.	1929-30.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
United Kingdom . . .	23·4	21·4	25·0	21·4	21·9
Germany	10·6	6·9	9·9	9·6	8·3
Japan	9·1	13 3	8·9	10·2	10·2
United States of America . .	8·7	11·1	11·1	11·8	11·6
France	7·1	4·5	4·9	5·3	5·3
Belgium	4·8	2·9	3 3	4·0	3·8
Austria and Hungary . .	4·0	·1	·1	...	...
Ceylon . . .	3·6	4·8	4·8	4·2	4·2
Persia, Arabia, Iraq., Asiatic Turkey, etc.	3·2	2·6	2·5	2·1	2·1
Italy	3·1	3·7	3·9	4·5	3·6
Hongkong	3·1	1·0	·7	·7	1·0
Straits Settlements	2·7	3·1	2·8	2·4	2·5
China	2·3	3·7	1·4	2·8	4·1
Central and South America . .	2·2	3·1	3·3	3·3	3·2
Netherlands	1·7	2·0	2·4	2·6	2·3
Australia	1·6	2·5	2·0	2·2	1·8
Kenya and Zanzibar . . .	1·0	·6	·6	·5	·5
Russia	·9	·03	·1	·1	·1
Spain	·8	·9	1·0	1·2	1·1
Java	·8	1·0	·7	1·1	1·3

Having described the chief features of India's overseas trade during the years 1930-31 and 1929-30, and mentioned the commerce across her land frontiers and around her coasts, we must now briefly enumerate some of the more important topical questions connected with trade which have recently been dealt with by the Government of India. These of course all relate to the period of time enumerated on the cover of this book, since in their case there is no such difficulty as in that of the detailed trade figures in obtaining up-to-date information. The majority of the matters we shall discuss,—and those we shall deal with first,—have arisen, directly or indirectly, out of the change in India's fiscal policy which was effected after the Reforms of 1920; for the Fiscal Commission, which was appointed in 1921, recommended that, subject to enquiry by a Tariff Board, industries in this country should, if they satisfied certain conditions, be enabled to secure protection against external competition;—and although when the Tariff Board came into existence in 1923, it was a purely experimental body created for one year only, the applications for protection made by various industries have been so numerous that it has continued in existence ever since, and seems likely, at any rate for some time, to remain so.

During the year under review a variety of important matters connected with the iron and steel industry were under consideration by the Tariff Board. The first arose out of representations made to the Government of India concerning the manufacture in this country of certain articles used on the railways, based on the contention that the import duties on similar articles shipped from abroad were not sufficiently high in relation to the protective duties levied on material required for manufacturing such articles in India. The question was accordingly referred to the Tariff Board, which recommended, after consideration, that a specific duty of Rs. 2/4 per cwt. should be imposed on fishbolts and nuts, dogspikes, and ordinary bolts and nuts, and of Rs. 2 per cwt. on rivets, gibs, cotters and keys. It also recommended that chrome steel switches and crossings should be brought under the protective tariff, and that stretcher bars which formed part of switches and crossings should be liable to the same duty as switches and crossings whether imported with the latter or separately. The Government of India accepted these recommendations and gave effect to them in the Steel Industry (Protection) Act of 1931. Another matter connected with the industry which came up for consideration during the year originated as follows. On the strength of proposals made by the Tariff Board in 1926, to the effect that the railway administrations should as far as possible arrange to purchase the whole of their requirements of rails in India, a contract was made with the Tata Iron and Steel Company, Ltd., whereby the Government of India agreed, subject to certain conditions, to purchase rails from that firm at the rate of Rs. 110 per ton for a period of seven years beginning on the 1st of April 1927. In September 1930, the Company represented that the orders placed with it for rails had fallen considerably below the estimate upon which the scheme for protecting the Indian industry formulated by the Tariff Board in 1926, and embodied in the Steel Industry (Protection) Act of 1927, was based. The Government of India accordingly agreed, subject to certain specified terms, that an extra payment of Rs. 20 per ton should be made to the Company for all rails ordered under the existing contract for the year 1930-31, and that there should be an additional payment of Rs. 10 per ton in respect of such rails of 115 lb. section as were ordered during that period. Moreover, since it appeared probable,—owing to the general financial stringency,—that the quantity of rails to be ordered during the remaining years of the

contract would continue to fall considerably short of the original estimate, the Government of India in the following December directed the Tariff Board to consider whether any additional payment for rails should be made for the remaining period covered by the contract, and also what additional payment, if any, should be made in respect of the 115 lb. section rails. After considering the Board's report, the Government decided to continue to pay the Company for rails ordered during 1931-32 at the same rates as were sanctioned in respect of the year 1930-31; the question what rates should be paid for the rest of the unexpired period of the contract,—that is, between the 1st of April 1932 and the 31st of March 1934,—was, however, left open. An important point also arose during the period under review in connection with the imports of galvanized sheets, owing to representations made by the Tata Iron and Steel Company that the Government should increase the protective duties leviable on this commodity under section 3 (4) of the Indian Tariff Act,—on the ground that galvanized sheets were being imported at so low a price as to render the existing protective duty ineffective. The matter was accordingly investigated by the Tariff Board, and a notification was issued increasing the duty on galvanized pipes and fabricated sheets to Rs. 73 per ton or 17 per cent. *ad valorem*,—whichever might be the higher,—and that on non-fabricated sheets to Rs. 67 per ton. The action of the Government was subsequently confirmed by the Legislature, which decided that the increased duties should remain in force until the 31st of March 1932, and that the question should be considered whether they might not thereafter be replaced wholly or in part by a system of bounties.

Apart from these three matters affecting the iron and steel industry, several other important fiscal questions came up for consideration during the year. As a result of the recommendation made by the Tariff Board in its report on the gold thread industry, an Act was passed during the 1931 Delhi Session of the Legislature imposing for a period of ten years a protective duty of 50 per cent. *ad valorem* on silver thread and wire and articles of a similar nature,—including so-called gold thread and wire mainly made of silver,—and restoring the original duty of 30 per cent. *ad valorem* on silver plate and silver manufactures of all sorts not otherwise specified. The Board's enquiry into the matter originated from the fact that under the Finance Act of 1930, a duty of four annas an ounce

was imposed on silver bullion, and in order to maintain the advantage obtained by Indian firms from the revenue duty of 30 per cent. *ad valorem* which had previously been imposed on silver manufactures, the latter duty was raised to 38 per cent.; the increase, however, was imposed only until the 31st of March 1931, on the understanding that the question of extending protective measures to silver manufactures would meanwhile be referred to the Board for consideration.

Interesting developments also took place during the year in connection with the possibility of establishing protection for the Indian sugar industry. As far back as March 1929, the Government of India had asked all the provincial Governments to indicate their views on a number of the problems involved, and their replies, when received, were submitted for examination to a specially qualified Committee appointed by the Imperial Council of Agricultural Research. The Committee reported to the Council to the effect that sufficient reasons existed for asking the Government of India to refer the whole matter for consideration to the Tariff Board; and since the Governments of the three Provinces most vitally interested in the sugar industry,—namely the Punjab, the United Provinces, and Bihar and Orissa,—as well as the Government of Bombay, were of the same opinion, this course was adopted. The Tariff Board's report on the subject was received by the Government of India in February 1931, but the Government's decisions upon it could not be reached before the conclusion of the period under review. Meanwhile, however, two successive increases, for revenue purposes, have been made in the existing sugar duties, one of which, —namely that effected under the Finance Act of 1930,—was discussed in our previous Report; for a description both of the extent and significance of the subsequent increase we must refer readers to the next Chapter, in which the whole matter is treated in detail.

The Indian Lac Cess Bill, which was referred to in last year's Report, was passed by the Legislature, as amended by the Select Committee, during the year, and will be brought into force simultaneously with the rules to be made under it. The report of the Hides Cess Enquiry Committee, whose appointment was mentioned in our previous issue, was published in September 1930; and the views of the provincial Governments, which had been consulted with regard to the Committee's recommendations, had not all been received by the end of the period under review.

The recommendation of the Indian Cinematograph Committee that a rebate of the customs duty should be granted in respect of films of definite educational value was accepted by the Government of India during the year. Refunds are granted by Collectors of Customs on receipt of claims supported by the necessary certificates from the Film Censors. Before accepting another recommendation made by the Committee, that raw films should be exempted from duty, the Government of India have decided that it is advisable to wait until the Indian industry has developed further.

The question of imposing a customs duty on substitutes for *ghee*, or clarified butter, was raised in the Legislative Assembly during the course of the 1931 Delhi Session by Mr. Bhupat Singh, who moved a resolution which ran as follows: "that this Assembly recommends to the Governor-General in Council that pending legislation on the lines of the English Food and Drugs Act in the Imperial and Provincial Legislatures, prohibitive customs duties be levied on that questionable commodity which goes by the name of *vanaspati* or vegetable *ghee* or vegetable oil." Resolutions embodying a similar recommendation had been moved on several occasions in the past. The mover's speech was based upon the claim that the imported vegetable product is a bad substitute for pure *ghee* and is injurious to health; he also contended that the producers of *ghee* in India were suffering financially from the competition of the imported vegetable product,—whose price was very much lower than that of *ghee*,—and urged the necessity of preventing the adulteration of pure *ghee* with the vegetable product. He was supported by five other speakers all of whom emphasized the necessity of ensuring that nothing is sold as *ghee* which is not the pure article; it was argued further that municipal and other local legislation in the matter was ineffective, since it was impossible to stop the sale of substitutes which were believed by the public to be pure *ghee*, by means of prosecutions under the Pure Food Acts. The resolution was however opposed by the Commerce Member, the Hon'ble Sir George Rainy, who pointed out that supplies of pure *ghee* were quite insufficient to meet the demand, and that the vegetable product by which it was being supplemented was not according to medical opinion injurious to health but had on the contrary a definite though limited value. The consequence of preventing such a product from entering the country would therefore probably be the adulteration of pure *ghee* with other positively deleterious sub-

stances. Moreover, the provincial Governments had sufficient legal powers to stop abuses. The Government of India was therefore bound to take the view that the action recommended in the resolution would constitute a serious and unwarranted interference with trade.

We have now disposed of the specifically fiscal problems which engaged the attention of the Commerce Department during the year, and may proceed to examine the various other matters of importance which arose. Among these, the discussions which took place on economic questions during the course of the Imperial Conference in London in October and November were probably the most outstanding. The Indian Delegation to the Conference consisted of the Right Hon'ble W. Wedgwood Benn,—Secretary of State for India,—H. H. the Maharaja of Bikaner, and Sir Muhammad Shafi; and Sir Geoffrey Corbett and Sir Padamji Pestonji Ginwala attended as substitute delegates. A variety of subjects of economic importance came up for discussion during the course of the proceedings, such as the general problem of increasing inter-Imperial trade, the work achieved by the Imperial Shipping Committee, the Imperial Economic Committee, and the Empire Marketing Board, and questions relating to standardization, Imperial communications, civil aviation, overseas settlement, research, forestry, cotton growing in the Empire, and the use of cinematograph films for educating producers and developing markets. As the Conference was not able, within the short time at its disposal, to examine as fully as was desirable the various means by which inter-Imperial trade might best be maintained and extended, it was resolved that the Economic Section of the Conference should be adjourned to meet at Ottawa on a date to be mutually agreed upon within the following twelve months. Unfortunately, however, this date at the time of writing has not yet been fixed.

Another important event of the year was of course the formal opening, by His Majesty the King-Emperor, in the month of July, of the splendid new offices of the High Commissioner for India in London. As was mentioned in our previous Report, this building, which is known as India House, was practically completed by the end of the previous March, and it will undoubtedly form a much more worthy setting for the chief Agent of the Government of India in London than his former offices in Grosvenor Gardens. In view of the increasing volume and complexity of the work of the

High Commissioner's office, the post of Secretary to the High Commissioner was abolished in 1930 and a post of Deputy High Commissioner was created in its stead; in addition, a new post, to be filled regularly by the deputation of an officer from India, was at the same time established, with a status and functions corresponding to those of the heads of the existing departments of the High Commissioner's office.

The scheme for appointing Indian Trade Commissioners in Europe, America, Africa, and Western Asia, and for the opening of a Commercial Intelligence office at Bombay, to which a reference was made in last year's Report, was sanctioned in March 1930. The post of Trade Commissioner at Hamburg has been filled by the appointment of Mr. S. N. Gupta, I.C.S., lately Deputy Indian Trade Commissioner in London, who opened his new office in March 1931; an officer has also been selected by the Public Service Commission from applicants not in the service of the Government for training for the post of Trade Commissioner at Milan. Further progress with the scheme, however, has unfortunately had to be postponed owing to the prevailing financial stringency.

As in the previous year, India was represented at a number of trade fairs and exhibitions in the United Kingdom and on the continent of Europe during 1930-31, the most important being the annual British Industries Fair, the Leipzig International Industries Spring Fair, and the Vienna Autumn Trade Fair. The policy adopted during previous years of having two stalls at the British Industries Fair was continued,—the foodstuffs stall being as usual in the Empire Marketing Board section, and the manufactured goods stall in the fancy goods section.

The desirability of devising some means for obtaining more reliable statistical information concerning the general economic condition of India has been engaging the attention of the Government for some time past, and was, it will be recollected, emphasized in the report of the Royal Commission on Agriculture, which was published in 1928. During the year under review it was decided that the existing work on the compilation of index numbers of wholesale prices at various commercial centres, of financial, agricultural, and coasting-trade statistics, and of statistics concerning the production of certain major industries, and the amount of foreign trade passing through the Kathiawar ports, should be developed and expanded; and in addition that the compilation and pub-

lication of statistics of inland trade, both rail and river borne, should be revived, and that a general analytical investigation should be undertaken of the facts accumulated under all these heads. Unfortunately work on the costliest of these items, namely the publication of statistics of inland trade, has since had to be postponed, owing to lack of funds. There have, however, been two other developments of importance during the year in connection with statistics which require mention. In the months of June and July a great deal of information bearing on statistical problems, which is likely to prove of great assistance in improving and developing the statistical record in India, was collected by Dr. Meek, the Director-General of Commercial Intelligence and Statistics, during the course of a tour he undertook in the United States, at the direction of the Government, to study American methods of statistical analysis; and during January and February Sir Arthur Salter, K.C.B., the Director of the Economic and Finance Section of the League of Nations Secretariat, accompanied by Mr. A. E. Felkin, visited this country at the invitation of the Government to consider the possibility of creating in India an organization for the scientific study of economic questions. Sir Arthur Salter's report on his visit however was not published until June 1931, and consequently cannot be discussed in this volume.

Mention was made in last year's report of India's accession to the Anglo-Turkish commercial *modus vivendi* of July 1929. This agreement lapsed, in accordance with its terms, on the conclusion of a complete Treaty of Commerce and Navigation between the United Kingdom and Turkey towards the end of 1930. In order to avoid any impediment to the trade between India and Turkey, a separate *modus vivendi* was concluded by an exchange of Notes in September 1930, to regulate the commercial relations of the two countries, pending the negotiation and conclusion of a special treaty. This *modus vivendi* provides for reciprocal most-favoured-nation treatment of goods, commerce, and navigation, and also of nationals in respect of travel, establishment, and acquisition of property.

The International Labour Conference, at its sessions held between 1920 and 1926, adopted a number of draft Conventions and Recommendations relating to the conditions of work for seamen, of which some have, and some have not been ratified by the Government of India. Among them were draft Conventions fixing the minimum age for admission of children to employment at sea, and

of young persons to employment as trimmers and stokers; also Conventions on the subjects of compulsory medical examination of children and young persons employed at sea, seamen's articles of agreement, and unemployment indemnity in case of the loss or foundering of a ship; in addition, there was a Recommendation concerning the general principles for inspecting the conditions of work of seamen. The Indian Legislature was consulted in each case on the questions whether it was possible or desirable for the Government to ratify these various instruments, and as ratification involved changes in the Indian Merchant Shipping Act of 1923, it was held at first that the necessary legislation should be undertaken when the Act came up for general amendment. Subsequently, however, when various extraneous considerations seemed likely to prevent any general amendment of the Act being effected for some time, it was decided that a special Bill should be prepared and introduced in the Legislative Assembly, embodying only the provisions of such of the draft Conventions and Recommendations as had been considered capable of being brought into effect in India. This measure, known as the Indian Merchant Shipping (Amendment) Act, 1931, came up for consideration during the Delhi Session, and was passed without modification by both Houses.

Legislative or regulative action in India has also resulted from the adoption of two other draft Conventions by the International Labour Conferences. In 1919, the Conference at Washington adopted a Convention which *inter alia* prohibited the employment of children under 12 years of age in the handling of goods at docks, quays and wharves. This Convention was later ratified by the Government of India, and in order to make its provisions effective in this country, a new Section, namely Section 6 (IA), was added in 1922 to the Indian Ports Act, 1908, which gave provincial Governments certain new powers in the matter. A doubt, however, subsequently arose as to whether this alteration of the Act empowered provincial Governments to make rules prohibiting the employment of children in handling goods not only on the shore-side, but also on the water-side of vessels standing in ports, and to resolve this doubt an Act, known as the Indian Ports (Amendment) Act, 1931, was passed during the Delhi session of the Legislature to provide against the employment of children under 12 years of age in handling goods anywhere within the ports to which the

Indian Ports Act of 1908 applies. The other draft Convention to which we have referred was that adopted by the International Labour Conference held at Geneva in 1929, concerning the marking of the weight on heavy packages transported by vessels. This Convention, also, was ratified by the Government of India, and for the present is being given effect to by means of bye-laws framed by the several Port Trusts,—except at Chittagong, where action is being taken under section 54 of the Indian Railways Act, since the jetties there are the property of the Assam-Bengal Railway.

During the period under review the Government of India was represented at two important maritime conferences. The first was the Load Line Conference which was opened in London in May, to which His Majesty's Government had invited the Government of India to send representatives. Sir Geoffrey Corbett, K.B.E., C.I.E., I.C.S., Engineer-Commander J. S. Page, R.I.M., Captain K. Ookerjee, Marine Superintendent of the Scindia Steam Navigation Company, Ltd., and Mr. N. D. Allbless, Chairman of the Scindia Steamships (London), Ltd., attended the Conference as delegates of India, and a Convention was adopted which the Indian delegates signed. The question of ratifying it was under consideration by the Government of India at the close of the year. In October 1930, an International Conference of maritime countries was held at Lisbon, to consider a report prepared by the Technical Committee for Buoyage and the Lighting of Coasts under the auspices of the League of Nations Advisory and Technical Committee for Communications and Transit, and to conclude, if possible, an agreement for the international unification of maritime signals. The invitation to participate in the Conference was received by the Government of India from the Secretary-General of the League of Nations through the Secretary of State for India, and Captain Sir Edward Headlam, Kt., C.S.I., C.M.G., D.S.O.,—lately Director of the Royal Indian Marine,—Commander E. A. Constable,—late R. N., and retired Deputy Conservator of Calcutta Port,—Mr. John Oswald,—Chief Inspector of Lighthouses in British India,—and Captain K. Ookerjee, were selected to attend on behalf of the Government of India. The Conference adopted agreements concerning maritime signals and what are known as manned lightships not on their stations, and recommendations on lighthouse characteristics and radio beacons. The Indian delegate,—Sir Edward Headlam,—did not append his signature to the agreement concerning maritime

signals, since it was considered unsuitable for Indian conditions, but the other two instruments were duly signed, subject to a declaration to the effect that none of the Indian States under British suzerainty were committed thereby. A third important maritime Conference, attended by representatives of Governments of Eastern countries interested in the deck passenger and pilgrim trades, and arising directly out of the International Convention for the Safety of Life at Sea which was signed in London in 1929, was held in India shortly after the conclusion of the period now under review, and will be discussed in our next Report.

The scheme for reorganizing and centralizing the mercantile marine administration in India, which was described in last year's report, was brought into force at the major ports of Aden, Karachi, Madras and Chittagong in May 1930, and at Rangoon in September. At Aden, in place of the Port Officer who had ceased to be in the service of the Aden Port Trust, an officer to be known as the Principal Officer of the Mercantile Marine Department, Aden District, was appointed. This officer is primarily the employee of the Government of India, but his services have been made available on certain conditions as Deputy Conservator to the Aden Port Trust. At Karachi, the Government mercantile marine work is not sufficient in amount to warrant the appointment of a Principal Officer in addition to an Engineer and Ship Surveyor. The Mercantile Marine Department at that port has therefore been placed in charge of a senior Engineer Officer of the Royal Indian Marine. From the date of this change the post of Port Officer at Karachi was abolished and the Port Trust appointed a separate Deputy Conservator instead. The Assistant Marine Transport Officer at Karachi was appointed *ex-officio* Nautical Surveyor and Deputy Shipping Master. At Madras an officer of the Royal Indian Marine was appointed Principal Officer in place of the Presidency Port Officer. He is the joint-servant of the Government of India and the Government of Madras, the cost of the appointment being shared by both Governments in equal proportions. An Engineer and Ship Surveyor, who has also been drawn from the Royal Indian Marine, was appointed to assist the Principal Officer on mercantile marine work for the Central Government. At Chittagong a Nautical Surveyor was appointed in place of the Port Officer, and is the joint servant of the Government of India and the Port Commissioners of Chittagong. The post is reserved for an officer of the Royal Indian

Marine. A complete separation between Central and provincial mercantile marine work was effected at Rangoon, and a separate office was established for the Principal Officer of the Mercantile Marine Department, Rangoon District. The superior staff employed on work for the Government of India at Rangoon now consists of a Principal Officer, a Nautical Surveyor, and an Engineer and Ship Surveyor.

Mention has been made in previous Reports of the policy formulated by the Government of India for providing facilities for training Indians in marine engineering. During the year under review three more technical scholarships, each of the value of £240 per annum, were awarded on the result of an examination, and the candidates selected left for England in June. Facilities were also provided, in 1927, for training Indian boys as deck officers, when the training ship "Dufferin" was established at Bombay. The ship at first was established as an experiment for three years only, since doubts were expressed as to how many Indian boys would be willing to come forward; but as the number of candidates seeking admission has been far in excess of the vacancies available, the Government of India decided during the year to make the ship a permanent institution.

In December 1927, the Government of Bombay appointed a committee to consider the question of establishing an Indian Sailors' Home at Bombay, as a memorial to the Indian seamen who fell in the War. The Committee,—which was presided over by Mr. W. H. Neilson, O.B.E., Chairman of the Bombay Port Trust,—was required to draw up and submit its scheme for the nature of the home, and its suggestions concerning the way in which the project should be financed, to the provincial Government, but as a result of the centralization of mercantile marine administration which has already been described, the Committee was subsequently asked to report to the Government of India instead. The report was completed in September 1929, and recommended that the home should be provided for Muhammedan engine-room and stokehold crews in Bombay at an approximate cost of Rs. 3,12,245 non-recurring and Rs. 15,000 recurring per annum. These proposals were examined by the Government of India in consultation with the Government of Bombay, the Bombay Port Trust and the shipping interests concerned, and it was decided that while the scheme as a whole was sound and practicable, the home should be open to all classes of

Indian seamen without distinction of creed or function. Work has already been started on the construction of the institution, a plot of land having been made available for it by the Bombay Port Trust, free of cost, on the Musjid Bunder Siding Road. The capital cost of the building will, it is understood, be met by a grant of Rs. 1,14,000 from accumulations in the Indian Lascars' Fund, a donation of Rs. 1,00,000 from the Bombay Seamen's Society, a donation of Rs. 10,000 from the Bombay Government, and a contribution amounting to Rs. 88,000 sanctioned by the Government of India from accumulations in the Sunday Penalty Fees Fund. Towards the cost of maintenance, which is estimated at Rs. 15,000 per annum, the Government of India have accepted the offer of the Bombay Port Trust to contribute Rs. 5,000 annually, subject to certain provisions concerning the manner in which the home is run; and the balance of Rs. 10,000 will be paid from the Sunday Penalty Fees Fund. The total annual grant has been sanctioned for five years in the first instance, and is subject to revision at the end of that period.

CHAPTER VI.

Finance.

In previous editions of this Report our account of the financial events of the year under review has been preceded by a brief sketch of the development of the existing financial relations between the Central and provincial Governments; and in view of the far-reaching constitutional changes which are now impending, it seems desirable to reproduce this account without modification in our present Report, in order that new readers may be enabled to consider, in their correct historical perspective, the many complicated problems on which public attention seems likely to be focussed at the time this volume is published.

Before 1870 all the revenues of India went into one purse, and the Provinces were allotted for their annual expenditure only those sums which the Government of India thought fit, or which it could be persuaded or cajoled into granting. In consequence the distribution of the public income became somewhat of a scramble, in which the advantage went to the most aggressive or persistent of the provincial administrations, without much reference to their real needs. But in the year we have mentioned Lord Mayo initiated the radically important alteration in policy whereby authority began to be devolved from the Central to the provincial Governments, which has led, by a series of logical steps, to the creation of the quasi-federal system of administration under which British India is ruled to-day. Lord Mayo's solution of the financial problem was to give each Province a fixed annual grant for the administration of the provincial services, and to give provincial Governments an interest in nursing the taxable capacity of their subjects by allowing them to impose certain local taxes in aid of the grant from the Central Government. It was not long, however, before further changes were called for, and between 1877 and 1883 means were adopted for rearranging the provincial finances on a wider basis. For example, in the provincial settlements of 1870-71 a fixed sum had been made over

to each local Government to defray the cost of provincial services, but by 1883 a share in the revenues had been substituted for the fixed grant. This gave a margin which might be increased by careful management, and the settlements were made liable to periodical revision. The heads of revenue which were made over to the Provinces were believed to be capable of expansion; but it was recognized that revenue and expenditure in the Provinces could not be made to meet exactly, and the excess of provincial expenditure over revenue was made up by assignments from the Central Government expressed as a percentage of the land revenue of each Province,—which, apart from these deductions, constituted a Central receipt.

The system initiated by Lord Mayo persisted without fundamental change until the establishment of the Montagu-Chelmsford Reforms in 1921. The principal modifications introduced after the readjustments effected between 1877 and 1883 were the semi-permanent settlements which were made in 1904, and the permanent settlements made in 1911. By the former the revenues assigned to a Province were fixed, and rendered immune from alteration on the part of the Central Government except in cases of extreme necessity, or unless experience showed that the normal assignment made was clearly disproportionate to provincial needs. The object of this reform was to give the provincial administrations a sense of financial security, and, in addition, a motive for carefully husbanding their resources. Henceforward they could maintain some continuity of policy, since they were assured that they would reap the benefits of their own economies, and would have no temptation to embark upon ill-considered schemes of expenditure with the object of showing at the next settlement with the Central Government that their scale of expenditure was high and their needs correspondingly so. In 1911 the permanence of the provisional arrangements made in 1904 was definitely recognized; at the same time important changes were made in the apportionment of certain heads of revenue as between the Central and local Governments,—the share of the Provinces in expanding heads of revenue being increased, while the fixed assignments allotted to them by the Central Government were reduced. Provincial revenues had in any case benefited considerably by the introduction of the new Famine Insurance Scheme in 1906, by which the Government of

India placed to the credit of each Province exposed to famine a fixed sum on which it could draw in time of need without trenching on its normal resources; if this sum became exhausted, it was arranged that further expenditure would be shared equally by the Central and provincial Governments, and, in the last resort, that the Government of India would give the Provinces further assistance from Central revenues. In 1917 this arrangement was simplified and famine relief became a divided head, the expenditure being apportioned between the Central and provincial Governments in the proportion of 3 to 1. Before the scheme of 1906 was introduced, the liability for famine expenditure had lain upon the Provinces, and the Central Government had only intervened when the former had no resources with which to meet it.

Thus, at the time when the Montagu-Chelmsford Reforms were introduced, the financial relations between the Government of India and the provincial Governments were broadly speaking as follows. The budget of the Government of India was made to include the transactions of provincial Governments, the revenue enjoyed by the latter being mainly derived from sources of income which were shared between the Government of India and themselves, and thus known as the "divided" heads of revenue; these as a rule consisted in such items as the land revenue, excise, income-tax, and the profits from productive irrigation works. The provincial Governments however took the receipts from forests and registration, as well as from courts and jails, while to the Central Government went the revenue from customs, railways, posts and telegraphs, salt, opium, and tributes from Indian States. Out of these incomings, the Central Government was responsible for defence charges, for the upkeep of railways, and posts and telegraphs, for the payment of interest on debt, and for the Home charges; while the Provinces met from their resources the expenses connected with land revenue and general administration, with forests, police, courts and jails, with education and medical services. Charges for irrigation were common to both the Central and provincial Governments.

The introduction of the Montagu-Chelmsford Reforms in 1921, however, necessitated radical alterations in the arrangements we have described, since the establishment of the principle of dyarchy in the provincial administrations,—whereby the control of certain

administrative subjects was transferred to Ministers responsible to popularly elected legislative councils,—rendered the retention of the system of "divided" heads of revenue impossible; and this, as we have seen, was the most distinctive feature of the old arrangement, and the means whereby the Central Government maintained a large measure of control over the provincial finances. Thus, after 1921, the intermediate category of revenue heads had to be abolished, and a system devised under which only central and provincial sources of revenue remained,—these being clearly defined and altogether distinct from one another.

A tentative scheme for a financial settlement between the Government of India and the Provinces was sketched in the Montagu-Chelmsford report itself, which was presented to His Majesty's Government in 1918. The scheme comprised the complete separation of the central and provincial budgets, and the enlargement of the provincial powers of taxation and borrowing. It was on the whole attractive to the provincial Governments, since it was calculated to increase their financial powers substantially; but the division of the revenues between the Central Government and the Provinces in such a way that the Central finances would be exposed to a deficit which must be met by contributions from the Provinces, obviously had to be the subject of further enquiry. In Section 206 of the report, certain estimates were made of the anticipated deficit of the Central Government and the contributions to be made by each individual Province. The proposed basis on which the contributions were to be fixed was the difference between the gross provincial revenue and the gross provincial expenditure. Other possible bases of settlement had been examined and this had been chosen as being at once the most practicable and the least inequitable. The objections to it were obvious enough, since the Provinces with the most liberal scale of expenditure were likely to fare better than those which had been more economical. But this and other objections were considered only to be dismissed. The authors of the Report admitted that their scheme would, to some extent, confirm existing inequalities, but to mitigate this they recommended that the whole matter should be re-investigated by a Statutory Commission ten years after the establishment of the reforms. Actually, however, it was found impossible to leave the question open in this way, since some details of the proposals

aroused vehement opposition. From Madras, for example, nearly five times as much would be levied as from Bombay, and from the United Provinces nearly five times as much as from Bengal, while the Punjab and Burma would have to contribute far more than other and wealthier Provinces. In the first despatch on the proposed reforms which the Government of India sent to the Secretary of State in March, 1919, attention was drawn to the objections that had been raised against this aspect of the financial settlement, and the Government stated definitely that the permanent retention of the criterion proposed in the report for provincial contributions to the Central Government would be unjustifiable. It was accordingly urged that a committee should be appointed to investigate the financial relations between the Central Government and the Provinces; and this view was endorsed by the Joint Select Committee of Parliament which sat on the Reforms Bill. In consequence, the body known as the Meston Committee was appointed to advise on the contributions to be paid by the various Provinces to the Central Government for the financial year 1921-22, the modifications to be made in the provincial contributions thereafter until there ceased to be an All-India deficit, and the future financing of the provincial loans account. These terms of reference were increased at the instance of the Government of Bombay during the Committee's investigations in India so as to include the question whether the Government of Bombay should retain any share of the revenue derived from the income-tax.

The task of the Committee was in essence to arrange an ideal distribution of the deficit in the Central revenues among the Provinces, and to fix a standard scale of contributions to which the latter would work up by stages. A certain amount of preliminary work had been done for it by a conference of financial representatives of the different Provinces which had been held in September, 1919, during which the normal figures of revenue and expenditure of all the Provinces had been examined. The Meston Committee did not take long in deciding to affirm the view expressed in the Montagu-Chelmsford report that income-tax should be credited entirely to the Central Government. That report pointed to the necessity of maintaining a uniform rate for the tax throughout the country, and to the inconveniences, particularly to the commercial world, of having different rates in different Provinces; it

further laid stress on the position of ramifying enterprises which had their business centre in some big city and did not necessarily pay income-tax in the Provinces in which the income was earned. The Meston Committee, indeed, carried the second argument still further, and pointed to the case of public companies with shareholders scattered over India and elsewhere, and their decision, therefore, was that income-tax should remain a Central receipt. General stamps, however, they found to be a different matter. The Montagu-Chelmsford Report had argued in favour of making over the revenue derived from this source to the Central Government, but the Meston Committee found that this argument had not the same force as that relating to income-tax; for by crediting the receipts from general stamps to the Central Government, and the receipts from judicial stamps to the provincial Governments, a "divided" head was still retained in the financial system, since both general and judicial stamps were controlled by the same agency, and a good deal of miscellaneous work and outlay was common to both. If the "clean cut" between Central and provincial revenues, which the authors of the Montagu-Chelmsford Report had regarded as imperative, were to be effected, then general stamps must be made a provincial receipt, and this, accordingly, the Committee recommended. There were other strong arguments in favour of this course. The task of the Meston Committee was to assess, if possible, some contributions on each Province and yet leave it with a surplus. At the conference of September, 1919, it had been shown that Bengal, and Bihar and Orissa, had normally no surplus at all, while that of the Central Provinces was so meagre that no appreciable contribution could be taken from it. The Committee, therefore, in the case of Bengal and Bihar, was confronted with a task that was impossible at the outset, if the proposals made in the Montagu-Chelmsford Report were to be confirmed. But by giving to the Provinces the receipts from general stamps, the problem could be surmounted. Most of the Provinces naturally desired to be allotted a growing head of revenue such as general stamps, and its transfer would make the assessment of cntributions much easier and, as between Provinces, less invidious. On the other hand, the adoption of this expedient would raise the deficit in the Central revenues considerably. Nevertheless in view of the circumstances of India at the time when

the Meston Committee was at work, the balance of advantage lay on the whole with the transfer of general stamps to the Provinces. It was felt that the settlement ought logically to treat all the local administrations alike, rather than depending on the grant of special subventions by the Central Government to some of them; and clearly the Reforms should not be allowed to start in Bengal and Bihar, and possibly in the Central Provinces also, with a demonstrably inevitable deficit. Therefore no other course seemed open than to increase the provincial sources of revenue by this particular means, despite the objections that could be raised to the provincialization of general stamps, owing to the necessity for having a uniform stamp duty for such instruments as bills of exchange, articles of association, transfers, shipping orders and share warrants.

Apart from the settlement of these two particular problems,—that is to say the allocation of the receipts from income-tax and general stamps,—the task with which the Meston Committee was confronted was to assess exactly what contributions the Provinces were to pay to the Central Government until such time as the necessity for the contributions disappeared with the disappearance of the deficit in the Central revenues. After carefully considering the figures provided by the conference of September, 1919, and receiving representations, the Committee fixed the sum which the Provinces between them were required to contribute at Rs. 9,83 lakhs. The total amount which the Provinces would gain and the Central Government lose as a result of the redistribution was estimated at Rs. 18,50 lakhs, and the figure of Rs. 9,83 lakhs was based on the necessity of leaving each Province with a sufficient margin to enable the new Councils to be inaugurated without the necessity of resorting to fresh taxation. After deciding what the aggregate contribution of the Provinces to the Central Government should be, the Committee had to settle the individual contributions of each Province towards the general total. At first the possibility of levying an even rate on the increase in spending power of all the Provinces was considered, but it was soon realized that this superficially equitable arrangement would cause hardship in some cases in view of the unequal financial strength of the Provinces. Each Province had to be considered on its merits, and the Com-

mittee drew up the following table as the proposed allotment of initial contributions.

Provinces.	In Lakhs of Rupees.		
	Increased spending powers under new distribution of revenue.	Contributions as recommended by the Committee.	Increased spending powers left after contributions are paid.
Madras	5,76	3,48	2,28
Bombay	93	56	37
Bengal	1,04	63	41
United Provinces	3,97	2,40	1,57
Punjab	2.89	1,75	1,14
Burma	2,46	64	1,82
Bihar and Orissa	51	*Nil*	51
Central Provinces	52	22	30
Assam	42	15	27
	18,50	9,83	8,67

Naturally this settlement did not please everybody; indeed, it pleased very few. A predominantly agricultural Province like the Punjab gained appreciably by having the whole of the land revenue allotted to it instead of only a portion as hitherto, but the more industrial Provinces like Bengal and Bombay were in a less happy position, since they provided the bulk of the revenue from income-tax and yet could not hope for any share of it. Madras, too, had special cause for complaint against the settlement. By far the heaviest initial contribution, namely, Rs. 3,48 lakhs, was demanded from this Province, and the Madras Government felt this sacrifice all the more keenly since, if its standard of public expenditure had not been maintained in the past at a comparatively moderate figure, its contribution under the reformed system of finance would not have been so great. Bengal and Bombay, on the other hand, complained that they were now faced with the necessity either of reducing their standard of public expenditure or else of running into debt,—a process which the Central Government was not likely

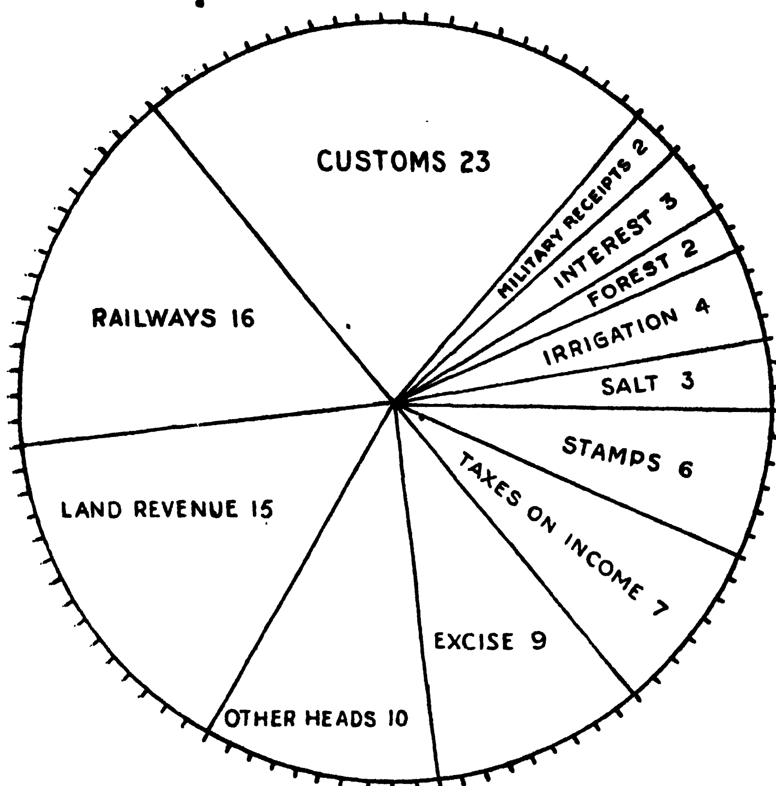
to allow to proceed far. However, the Government of India under the stress of its own over-riding necessity had no alternative but to adhere to the Meston Award, and so the Reforms opened with what some of the Provinces regarded as a crippling levy on their revenues. The Joint Select Committee of Parliament, however, made certain modifications in the Meston proposals. The scheme of standard contributions was rejected, and it was pointed out that the provincial contributions should be wiped out at the earliest possible moment. Further, it was directed that the Provinces should be given a small share in the growth of income-tax. It must be admitted that the years immediately following the Meston Settlement brought little happiness to the financial departments in the Provinces, but nevertheless the payment of provincial contributions was only partly responsible for this, since the country was at this time engaged as a whole in surmounting the many exceptionally difficult economic problems that arose as a result of the war. The greater part of the reconstructive work had to be undertaken by the provincial Governments, which also had to incur large expenditure in raising salaries to meet the increased cost of living and in creating new departments in accordance with the expansion of their responsibilities. The years following 1920 were therefore difficult both for the Provinces and the Government of India, and the provincial Governments were forced to look for relief primarily to the remission of the provincial contributions, for which there were frequent and vehement demands.

According to the plans that had been laid down by the Meston Committee and the Joint Select Committee of Parliament for the gradual abolition of provincial contributions, certain Provinces had priority over the others in this matter. The Committee gave Madras, the United Provinces, the Punjab, and Burma the first claim on remission, and not until almost half the total contributions had been remitted could any other Province claim relief. From that point onwards, however, every Province was to share in a prescribed measure in such relief as the Government of India could grant, until the contributions were altogether abolished. The first remission was effected in 1925-26, when, after showing a surplus of Rs. 3,24 lakhs in his budget speech, Sir Basil Blackett made the welcome announcement that he proposed to employ Rs. 2,50 lakhs of this surplus for the permanent remission of provincial contributions. As a result, Madras received Rs. 1,26 lakhs, the

Punjab Rs. 61 lakhs, the United Provinces Rs. 56 lakhs and Burma Rs. 7 lakhs. In the next budget statement, that for 1926-27, Sir Basil Blackett stated that a further sum of Rs. 1,25 lakhs would be permanently remitted to the same Provinces, and accordingly Rs. 57 lakhs went to Madras, Rs. 33 to the United Provinces, Rs. 28 to the Punjab, and Rs. 7 to Burma. In the following year the Finance Member declared a net recurrent surplus of Rs. 3,64 lakhs, and again he decided that the most suitable purpose to which the surplus could be applied was the remission of provincial contributions. The surplus of this particular year was only Rs. 1,81 lakhs less than the amount that would be required to abolish provincial contributions altogether; and this was actually achieved in the year 1928-29, when Sir Basil Blackett announced in his budget speech that the portion of the contributions which he had remitted temporarily for 1927-28 would henceforth be permanently remitted. The section of the speech which announced the permanent extinction of provincial contributions occupied only 12 lines in the printed report, and thus curtly and inconspicuously was accomplished one of the greatest triumphs of the reformed system of government in India.

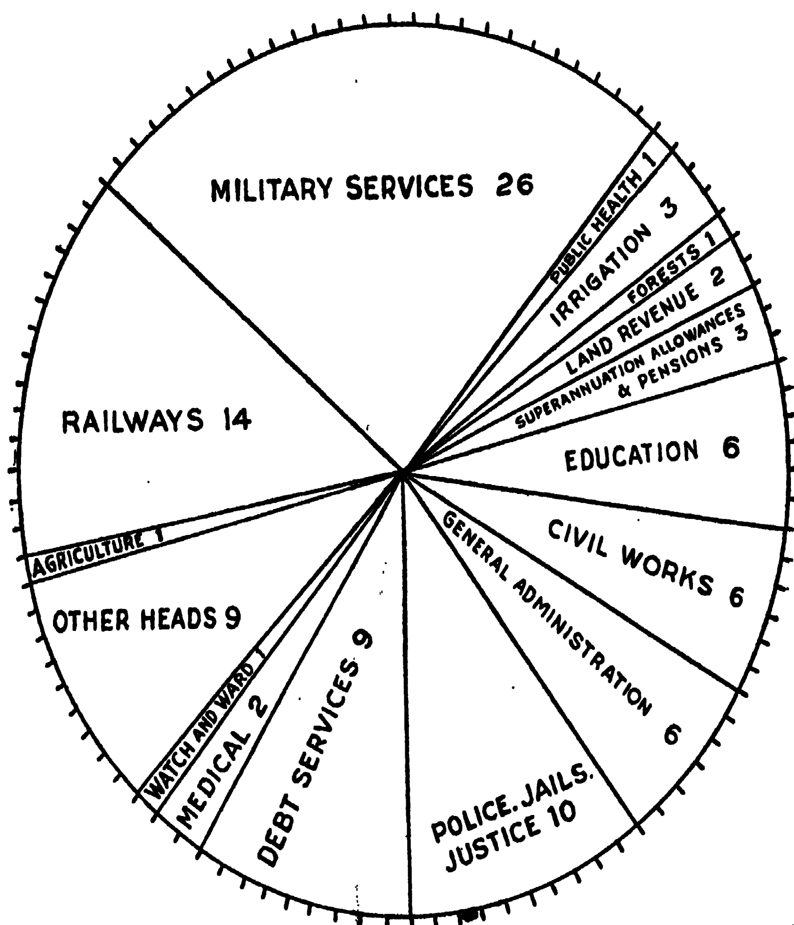
Let us now turn to consider the more important features of the existing financial system which have no direct connection with the Meston Award, and have arisen either out of the original proposals of the authors of the Montagu-Chelmsford Report, or out of detailed arrangements effected between the Central and provincial Governments. Although the control of the Secretary of State over Indian finances is still considerable, and certain limits of expenditure are prescribed beyond which his sanction is necessary, his powers of intervention were nevertheless substantially curtailed by the Reforms, and can no longer be extended to cover the variety of comparatively unimportant matters, such as the expenditure of semi-official municipal bodies, in the way that was formerly possible. In the Provinces, the proposals of the Executive for expenditure in connection with "voted" heads have now to be presented to the Legislature as demands for grants, which may be either accepted, curtailed, or rejected; and the financial powers of the provincial Legislatures are thus real and considerable, despite the fact that as yet they have no control over contributions payable to Central revenues, charges on loans, expenditure prescribed by law, the salaries and pensions of officers appointed by or with the

Combined Indian Revenue, Central and Provincial, in 1929-30, shown in percentages under various heads. The actual revenue for the year was Rs. 227,26,48,000.



[The basis of reckoning is the same as that on which the accounts and estimates are prepared; working expenses of the Railway, Irrigation, Posts and Telegraphs Departments, refunds and the like being deducted from revenue and not treated as expenditure.]

Combined Indian Expenditure, Central and Provincial, in 1929-30, shown in percentages under various heads. The actual Expenditure for the year was Rs. 226,21,99,000.



[The basis of reckoning is the same as that on which the accounts and estimates are prepared; working expenses of the Railway, Irrigation, Posts and Telegraphs Departments, refunds and the like being deducted from revenue and not treated as expenditure.]

approval of His Majesty or by the Secretary of State, the salaries of High Court Judges, or in certain Provinces, expenditure on "backward tracts",—and despite the fact also that the Governor has certain over-riding rights to certify the necessity of various financial demands. Moreover the provincial Governments as a whole,—and apart from the question how far they are, and how far they are not, responsible to the Legislatures,—now exercise practically full control over their own sources of revenue, namely the provincial balances, receipts from provincial subjects, provincial taxation, proceeds and recoveries from loans, and the share of the income-tax received from the Province. The power to impose provincial taxation was also much enhanced under the Reforms, although it is subject in some respects to the previous sanction of the Government of India. In addition, whereas in pre-Reform days, provincial Governments were not allowed to borrow in the open market, and were discouraged from borrowing otherwise, their increased control over local affairs, especially on the "transferred" side, has led to material alteration in this respect; and they are now empowered, subject to the sanction of the Secretary of State in respect of loans raised outside India and to that of the Governor-General in Council in respect of loans raised inside India, to raise money in the open market on the security of their own revenues. In addition they are able to obtain loans from the Provincial Loans Fund, which was established by the Central Government in 1925. Certain important functions and responsibilities have also been allotted to the provincial Finance Departments under the new system. They are the custodians of the Famine Relief Fund, and must watch the provincial balances and advise on all important financial questions, such as proposals for new loans or taxation, the grant of new rights, assignments of land revenue, schemes for fresh expenditure, and the creation, modification, or abolition of posts. They also prepare the budget, lay the Audit Appropriation Report before the Public Accounts Committees, and ensure that audits are correct and effective.

As regards the Central Government, the position is rather different, since although wider financial powers were conferred upon it, also, under the Reforms, they are of degree only, not of kind, owing to the fact that the principle of dyarchy was not extended to it; and the Secretary of State still approves the Central Government's budget before it is presented to the Legislative

Assembly, still sanctions new taxation, and still controls borrowings outside India, the gold reserve, the paper currency, the exchange policy, the pay, allowances and conditions of service of the All-India Services, and many other matters.

Before concluding our sketch of the existing system of Indian finance, we must not omit to mention a number of arrangements which have recently been made between the Central and provincial Governments, whereby the latter have benefited considerably. The creation of the Provincial Loans Fund in 1925,—to which we have already referred,—has been of great value in enabling the provincial Governments to borrow large sums on comparatively easy terms, and to use them,—subject to suitable safeguards on behalf of creditors,—for financing the particular schemes of development to which they attach importance. Another means whereby the position of the Provinces has been improved is the agreement that has been reached concerning the interest they are required to pay on loans. For some years the provincial Governments had complained that they were allowed no interest when they had credit balances with the Government of India. This grievance has now been removed, and provincial Governments may place money in fixed deposit with the Government of India and receive interest thereon. Similar adjustments have been effected in several other matters. For example, when it appeared in 1924 that the assignments made yearly to the Provinces on account of the sale proceeds of unified postage and revenue stamps had become inadequate, suitable increases were forthwith effected. Another project which has been receiving attention for some time is that of separating Central and provincial banking accounts; this, however, is obviously a matter in which it is necessary to move with special caution, and hitherto no definite settlement has been made. Experiments have nevertheless been undertaken in the United Provinces by separating audit from accounts, and entrusting business connected with the latter to the provincial Government. At first the change was introduced in two departments only, —those of Education and Police,—but as it proved satisfactory it was extended to all departments in 1926.

This rapid survey will have enabled the reader to appreciate the way in which the relations between the Central and provincial Governments in financial matters have developed, and we may now proceed to describe the events which occurred during the year under

review. In our previous Reports this has been done almost entirely by means of quotations from the speech made by the Finance Member in presenting his annual Budget, but on this occasion, in view of the exceptionally difficult financial circumstances which have prevailed, we propose to preface these by a few general remarks derived from other sources.

The outstanding feature of the year 1930-31 was acute economic depression, which was probably unparalleled in its intensity and the widespread nature of its reactions. All countries did not of course suffer equally, but none escaped unscathed, and those whose trade consists chiefly in the export of raw commodities in exchange for manufactured goods were particularly badly affected. The general fall in wholesale prices which started in the winter of 1929 continued without interruption to the end of the year under review. Between April 1930 and March 1931, wholesale prices fell by 15 per cent. in the United Kingdom, 18 per cent. in the United States of America, 19 per cent. in Japan and 19 per cent. in India. Opinions differ as to the causes of this phenomenon, which have been variously ascribed to over-production, maldistribution of gold, underspending, and want of confidence engendered by the enormous losses suffered by investors when the speculative boom in the stock markets of the United States suddenly subsided. One of the most remarkable features of the collapse was the effect it had on rates of discount ruling in the three most important international money markets,—though it should be noticed that the rates in countries such as India did not move in sympathy. The Bank of England rate, which was reduced to the low figure of 3 per cent. on the 1st of May, remained at that figure throughout the rest of the year. In the United States, the Federal Reserve Bank rediscount rate reached 2 per cent. on the 23rd of December, and the Bank of France rate, which had been reduced to 3 per cent. in January 1930, was further reduced to 2½ per cent. from the 1st of May 1930, and again reduced to 2 per cent. from the 2nd of January 1931. Some events of the year which had a contributory effect on the general financial depression may here be mentioned briefly. The large number of bank suspensions in the United States and the so-called Oustric collapse in France both conspired in no small degree to retard a return of confidence. In South America, political disturbances in several of the Republics, which are predominantly agricultural, added to the distress caused by the fall in prices of produce, and the

restriction in purchasing power which ensued reacted severely on the manufacturing countries with whom they had trade relations. The Far East was no better off. Although internal dissension in China diminished substantially and the country was comparatively free from warlike operations, recovery was hindered by the precipitous fall in the price of silver. Indifferent harvests and a heavy decline in exports led to extensive sales of the metal with the result that its value, which had already shared in the general fall in commodity prices, and was further depressed by the addition of stocks of demonetised silver to the already large supply, fell to a record low level. So far no action has been taken on the report of the Kemmerer Committee published at the end of 1929-30, which contained certain recommendations in favour of establishing a gold standard for China and the eventual redemption of the silver currency; but it was decided during the year under review, as a measure of protection, that customs duties should be collected in future in gold at the Chinese ports. Japan suffered as much as other countries from unemployment, the fall in the price level, and the heavy decline in exports. In support of the stabilised value of the yen, gold to the amount of 137 million yen had to be exported during the year. The difficulties which were experienced by Australia are too well known to require description. On the other hand, an event which was not only of immediate practical importance in the financial world, but also inspired great hopes for the future, was the opening on the 17th of May 1930, of the Bank of International Settlements, which it is believed must lead to much closer co-ordination in policy between the Central banks and the currency authorities.

The difficulties in which Indian financial affairs were involved by the trade depression were of course greatly accentuated by political developments. The Civil Disobedience Movement inagurated early in the year soon began to have a very deleterious effect on trade not only within this country but also outside, where the trend of events was being closely watched. The feeling of nervousness and insecurity which was so prevalent after the session of the Lahore Congress in December 1929, reappeared in a more acute form, and business, particularly in Western India, was for some time practically paralysed. In consequence of this state of affairs the Government, as in the previous year, had to take measures to control the short-money market and to withdraw redundant funds

by continuous issues of treasury bills and contractions of the currency; and as it was found impossible to meet the requirements of the Home Treasury in the ordinary way through the market, recourse was had on three occasions to sterling borrowing, which, since the credit of the country was by now seriously impaired, could only be effected on comparatively disadvantageous terms. The tendency noticed in 1929-30 for investors to remit their money abroad persisted, and as will be seen from the extracts from Sir George Schuster's Budget speech which will be reproduced later, there are good grounds for believing that a substantial export of capital took place during the financial year. There was also a considerable amount of speculative remittance abroad with a view to repatriation of funds in the event of an alteration being made in the legal exchange ratio as a result of political pressure. The position was such that for a short time banks refused to sell Exchange without cover, and during the latter part of the year Government had to meet demands for sterling at their statutory rate to the amount or £5·7 millions. The Prime Minister's speech at the conclusion of the Round Table Conference however had a salutary effect and helped to restore confidence, as it was made clear that the Imperial Government was determined that the maintenance of India's financial stability and credit should be amply provided for in the new constitution. This feeling of confidence was strengthened by the publication of a written statement given to a member of the House of Commons by the Secretary of State on the 11th of February, which declared that " the Government regard the rupee ratio question as having been settled in 1927, when the Indian Legislature passed the Currency Act by which the rupee was rated at 1*s*. 6*d*. gold. The Government will use all the means in their power to maintain this rate in accordance with their statutory obligations ".

The net imports of gold bullion to India during the year were valued at Rs. 12·75 crores, which is approximately Rs. 1·5 crores less than in the previous year. The fact that this figure is less than half of the average of the net imports for the years 1920-21 to 1924-25, and is actually lower than in any year since 1910 cannot, however, be regarded as indicating that the people of this country are giving up their habit of investing in gold. In view of the very heavy fall in commodity prices, and the consequent diminution in the surplus profits accruing to the owners of export crops, a decline

in gold purchases was to be expected, and it is indeed remarkable that in the peculiar circumstances of the year the decline was not even greater. The gold tendered on private account in the Bombay Mint for refining, most of which came from the Indian mines, amounted to 1,042,932 fine tolas as against 1,211,813 in 1929-30. Taking the value of this gold at Rs. 2·23 crores, and allowing for the amount of gold tendered to Government, the net private consumption of gold may be taken to have decreased from Rs. 16·79 crores in 1929-30 to Rs. 12·90 crores in the year under review. It is noteworthy that as much as Rs. 11·5 crores worth of gold bullion and sovereigns,—that is to say, about 87 per cent. of the total imports of the year,—was imported between April and September; in particular, the huge amount of Rs. 3·67 crores was imported in the month of August alone. This was probably due to two facts, firstly, the natural inclination of the populace to buy gold for hoarding in times of political uncertainty, and secondly to the prevalence of propaganda urging the cultivators to purchase this commodity instead of piece-goods and other imports which were on the boycott list. The result was that India imported more gold and sovereigns in the early part of the year than she could conveniently absorb, and the price of the metal in Bombay fell from Rs. 21-11 in April to Rs. 21-3-6 at the close of the year. In the absence of any improvement in demand, bullion dealers were unable to retain their stocks and eventually were forced to realise by tender to the Bombay Mint at the Government buying rate. A noticeable feature of the closing months of the year was a substantial return of the metal from up-country districts to Bombay. This inflow was estimated to have amounted to between 5,000 and 6,000 tolas of fine gold a day, and in part, at any rate, represented gold taken out of hoards and sold to meet the current expenses of the owners. Towards the close of the financial year, while sterling exchange remained at or just above the gold export point, the price of gold in Bombay was at or below the Government statutory buying rate.

As regards silver, when the financial year opened the price of the metal in London stood at 19$\frac{7}{16}$*xd.* per standard ounce and at the close, namely in March 1931, it was 13$\frac{3}{16}$*xd.* The fall in value this year was thus more pronounced than ever, and in view of the fact that silver is used as currency over a very large part of the world, the general economic effects of this decline have possibly been more serious than that of any of the other commodities. The main

cause of weakness has been events in China, whose exports have been greatly reduced by warfare and political disturbances, as a result of which, in order to pay for imports, large amounts of silver have had to be sold. On the 15th of May 1930 the Chinese Government issued an order prohibiting the import of foreign coin, as it was clear that several Eastern countries, in view of the great decline in the price of the metal, were considering the adoption of a gold standard and endeavouring to dispose of their surplus coinage in China. Apart from this, owing to the peculiar conditions of silver production, a fall in its price does not necessarily bring about a corresponding decline in output,—production during 1930 being as much as 241 million fine ounces, which is only 21 millions less than the figure for the previous year. The collapse in the value of silver and the resulting decline in the purchasing power of China have recently evoked suggestions from many quarters that an international effort should be made to deal with the situation; but although the Government of India have stated that they would be prepared to co-operate with other silver interests in endeavours to control the production of new silver and the sale of new and existing stocks, no practical proposals to this end have so far been made. This topic will be dealt with in more detail in the quotations from Sir George Schuster's speech that follow later.

We may now proceed to consider the questions of exchange and remittances to the Secretary of State. The total amount of sterling acquired during the year amounted to £5,395,000, the average rate of purchase being 1*s*. $5\frac{27}{32}$*d*. Exchange opened in April at 1*s*. $5\frac{13}{16}$*d*., and between then and the middle of November there were no very serious signs of weakness despite the depression in trade and the progress of the Civil Disobedience Movement. The latter date however saw the beginning of a distinct change for the worse. This was partly due to the circulation of rumours to the effect that one of the recommendations to be made at the Round Table Conference in London would be that a reversion should be made to the old statutory 1*s*. 4*d*. ratio. In consequence, not only was Government unable to purchase sterling between then and the end of February, but a demand arose for the sale of sterling by Government at the statutory rate of 1*s*. $5\frac{49}{64}$*d*. The market was governed almost entirely by the political situation throughout this period and the amount of sterling sold between November and

March totalled £5,650,000. The tone of the market however improved considerably towards the end of the financial year as a result of the statement made by the Secretary of State which has already been mentioned. The successful conclusion of the political negotiations which were proceeding at Delhi had a still more salutary effect, and the tone of the exchange market in common with that of all other markets showed an immediate improvement, the spot rate touching 1*s*. 5 *d*. in the third week of March.

As regards money conditions in India, the year opened with the Bank rate at 6 per cent., at which level it remained until the 10th of July, when it was reduced to 5 per cent. Owing to the fall in prices the demand for finance throughout the year was very much less than usual, and had it not been for the continuous issue of treasury bills by Government, money rates would have fallen to a very low level in the slack season. In addition to these sales the currency was contracted during the year to the extent of Rs. 38·67 crores net, in order to remedy the situation created by the fall in prices and consequent redundancy of money. The bank rate was raised to 6 per cent. from the 20th of November and again to 7 per cent. on the 15th of January, when the seasonal demand for money to finance the cotton and seeds crops set in. The rate remained at 7 per cent. until the close of the period under review. The disparity during the year between the Indian official bank rate and the discount rates which obtained in outside international money markets was very marked,—a fact to which we have already drawn attention.

The state of the public debt now requires consideration. During the year there was an increase of Rs. 22 crores in unproductive debt, mainly because of the revenue deficit and the loss on the sale of silver. The internal debt was increased by Rs. 6⅔ crores from Rs. 648·28 crores to Rs. 645·95 crores, and the external debt by Rs. 28·81 crores from Rs. 488·20 crores to Rs. 517·01 crores. The amount of revenue applied to the reduction of debt during the year was Rs. 6·15 crores and in the Budget for 1931-32 provision for the application of a further Rs. 6·78 crores has been made. Of the amount applied during the year, nearly Rs. 1·80 crores were credited to the depreciation funds of the 5 per cent. 1929-47, 1939-44 and 1945-55 loans; and as the market price of these loans fell during the year below the price at which purchases for the depreciation funds have to be made, Rs. 1·97 crores had to be spent in purchas-

ing these loans for cancellation. The total balance of the funds at the end of the year including interest on investments amounted to Rs. 6·67 crores, of which Rs. 2·47 crores remained uninvested at the end of 1930-31. The rupee loan floated during the year was a tax-bearing 6 per cent. issue. It was issued at par and is repayable at par on the 15th of August, 1936, or, at the option of Government, on any half-yearly interest date after the 15th of August 1933, subject to three calendar months' notice. The loan was opened for subscription on the 28th of July and was for an unlimited amount. The total subscriptions totalled nearly Rs. 29·71 crores,—a satisfactory sum in the circumstances; for the stock market, particularly in Bombay, was disorganized and dominated by political excitement. When the loan was announced it was freely rumoured that an attempt would be made to boycott it and much propaganda was indulged in with that object. The terms offered represented a rise of nearly ½ per cent. in the Government borrowing rate, but it is clear that under such conditions as prevailed a high potential yield was necessary to attract subscriptions. When the loan was announced the prices of other securities fell in adjustment to it, which was natural; but after the subscription lists were closed a welcome change came over the market. Prices steadied, and the new loan quickly went to a satisfactory premium. The disturbance caused by the issue, therefore, was not very great. An interesting feature of the subscriptions for this loan was the very large number of applications received from small investors, applications for sums of Rs. 10,000 and less forming about 83 per cent. of the total. Three sterling loans were floated in London during the year, namely India 6 per cent. Bonds, 1933-35, issued in May at £99 per cent., the total amount issued being £7,000,000; India 6 per cent. Bonds 1935-37, issued in October at par, the total amount issued being £12,000,000; and India 5½ per cent. stock 1936-38, issued in February at £97, the total amount issued being £17,181,250, of which £12,000,000 was received in cash and £5,181,250 issued by conversion of India 5½ per cent. stock 1932. Of this loan, £8,420,000 only was collected during the year under review, the balance being realized in the next financial year.

In general, the prices of Indian securities, as was to be expected, declined fairly substantially during the year. The quotations of the 3½ Sterling Loan in London are usually taken as a safe index, and whereas the highest and lowest prices in April 1930

were 65½ and 62¾, in March 1931, they had fallen to 62 and 58. It may be noted that during the same period the quotations for 5 per cent. War Loan in London rose from 103⅝ - 101¼ to 104⅛ - 103⅝.

Having now indicated some of the outstanding financial events of the year, we may proceed to supplement and reinforce them by quotations from the speech made by the Finance Member, the Hon'ble Sir George Schuster, K.C.M.G., C.B.E., M.C., in presenting his third Budget in the Legislative Assembly on the 28th of February 1931, which opened as follows: "Sir,......I think I may feel assurance that all Members of this Assembly, in whatever quarter of the House they sit, will agree with me at least in one thing, and that is that we meet in circumstances of great difficulty, and that the responsibility of which I have to render account to-night is a heavy and perplexing one... The year which we are just completing has witnessed one of the worst industrial and trade depressions in history... As a result of the fall in prices and the trade depression practically all classes in all countries are suffering from a lack of purchasing power. It is too early yet to say whether the bottom of this movement has been reached, but in considering prospects for next year, I think it is necessary to reckon that, as regards prices and the general volume of commercial activity throughout the world, recovery will be slow. The fall in prices has affected most severely those countries whose economic activity is mainly directed to the production of primary agricultural products... India may therefore perhaps be said to be going through the worst time now. She has felt the severity of the fall in the case of what she has to sell, but has not obtained a corresponding advantage of the fall in prices of what she has to buy.

"Apart from the effects of the economic crisis, the situation in India has been aggravated by special factors which are only too familiar,—internal disturbances and the uncertainty caused by the prospects of fundmental constitutional changes... A good deal of interest has been taken in the question as to how much of the present economic depression in India is due principally to world causes, and how much to political disturbances in India... So far as the total volume of India's external trade is concerned, the main course of events has been determined by world economic conditions. Exports have kept up well in volume, and the total imports have not declined to a degree appreciably out of propor-

tion to the drop in the value of the exports... On the other hand... internal trade has suffered disastrously as a result of political disturbances. Unnecessary losses to private traders must have been very great, while enormous sums of money must have been diverted from productive purposes... Above all,...most damaging effects have been caused in what I may describe as the region of Finance. The implications of the movement have weakened confidence in India as a field for investment both at home and abroad, and this had led to a decline in the price of Indian securities, both Government and private, to a lack of credit for traders and of capital for new enterprise, and to a steady export of capital from the country. This has meant increased expenditure on loans for Government and has forced Government to take measures to protect the position, which have resulted in high money rates, with a consequent increase in the difficulties of traders in these very difficult times... The country has, it is true, survived the past year without irreparable disaster. But the reserves and credit of all...have been seriously weakened, and any continuance of internal disorders is a matter which all who have the true interests of India at heart must view with the gravest possible concern. It might, in fact, mean that India, on the day when she should be inaugurating her new constitution with bright hopes of success, would find herself, instead, struggling desperately for mere existence in a morass of economic troubles.

"As regards external trade there are some features which deserve special comment. The visible balance of trade in favour of India (including private imports of treasure) for the first 9 months of the current financial year was 34·43 crores, compared with 41·62 crores for 1929, 39·76 crores for 1928, and 33·07 crores in 1927. The balance was therefore not strikingly worse than the average of the last few years and was actually better than in 1927. As against this, of course, the value of trade has declined enormously,—exports of merchandise for the 9 months being down by 61 crores as compared with last year, and imports by 56 crores. ....If we compare the results for the calendar year 1930 with the calendar year 1929 and reduce them to a common basis as regards price, we find that the volume of exports declined by less than ½ per cent... while the volume of imports declined by just under 18 per cent. This greater decline in the volume of imports was natural. The country pays for its imports with its exports, and

since...the price of the goods India exports fell much more than the price of goods which she normally imports, the same volume of the former could only buy a smaller quantity of the latter. It is, I think, worthy of special comment that, in these times of bad world conditions and of general over-production of the agricultural commodities on which India relies, she has been able to maintain the volume of her exports. It is a sign of general health in the economic condition which, in spite of the diminished prices received, must...be regarded as satisfactory...

"I shall...refer now to the most important features in the results for the current year... I expect that we shall lose as much as 9½ crores under Customs, of which cotton piece-goods and jute contribute 3,45 lakhs and 85 lakhs, respectively... Under Taxes on Income, I expect that we shall lose 2·20 crores notwithstanding the fact that the assessments have reference to the incomes of the previous year. The revenues of the Indian Posts and Telegraphs Department have also been seriously affected by the prevailing conditions, and the working of the Department is expected now to result in a loss of no less than 1,36 lakhs against 48 lakhs anticipated a year ago. The deterioration on the Finance Headings is in a large measure due to the ways and means operations of Government which I shall deal with later. The main items of deterioration as compared with the budget may now briefly be summarized as follows:

	Lakhs.
Important revenue heads, *viz.*, Customs, Taxes on Income, Salt, and Opium, (net)	12,10
Posts and Telegraphs (including the Indo-European Telegraph Department) . . .	89
Finance headings, *viz.*, Debt Services, Currency and Mint	1,38
Other heads	5
Total .	14,42

As the final budget estimates showed a surplus of 86 lakhs, the revised estimates work up to a deficit of 13·56 crores.

"I can now turn to the estimates for 1931-32. In making these, I have been influenced by the following considerations. So far as concerns the special disturbances as affecting economic activity in India, we may at least hope that these will not be

aggravated during the coming year, and that their effect will gradually diminish. On the other hand, so far as general conditions are concerned, although I believe that a return to peace and co-operation in India might have a direct influence on a world recovery, nevertheless, it would be prudent to reckon that as regards the general level of prices, and as regards the general volume of commercial activity throughout the world, recovery will be slow... On these grounds I think it necessary to be cautious in the revenue estimates for next year...

"I calculate that we must face a fall in tax revenue, as compared with the current budget estimates, of no less than 13·16 crores... For Customs I estimate total receipts of 46·64 crores, which is 8 crores worse than the budget estimates for the current year, but 1½ crores better than what we now expect to realise this year... For Taxes on Income I estimate receipts of 13·50 crores, which is 4½ crores worse than the current budget and 2·30 crores worse than what we expect to realise this year... These two heads alone account for a deterioration of 12½ crores. Apart from this, there will be the normal drop in opium revenue, due to our policy of reducing exports, and other minor deteriorations which make up the figure of 13·16 crores which I have given... I come next to the prospects for the great commercial undertakings,—Posts and Telegraphs, and Railways. As regards Posts and Telegraphs, business is badly affected by the current depression, and we must face a net deficit of 1·41 crores in the Indian Posts and Telegraphs Department, or, adding capital expenditure charged to revenue, of 1·52 crores. The Budget estimate for the current year was bad enough, but the revised estimate under the head as a whole is 80 lakhs worse than that. As to Railways, I need not say very much... Owing to the way in which the "Railway contribution" is calculated, our own budgetary estimates are not yet seriously affected. But...we are living on our Reserves now and this process cannot be indefinitely continued. If there is no improvement in sight by the end of next year, the whole position will have to be reconsidered... The actual Railway contribution is estimated at 5·36 crores instead of 5·74 crores in the current budget, so that here we have a deterioration of 38 lakhs. Taking these figures together with those for Posts and Telegraphs, the total deterioration on our main commercial undertakings is 1,18 lakhs.

" Next we must consider the general Finance headings, Interest receipts, Currency and Mint receipts, Interest on Debt and the Reduction and Avoidance of Debt provision... Our position has been adversely affected under these headings in four ways. First, and mainly, there is a loss of profit to the Government from currency, partly owing to the decreased volume of currency in circulation, which is a necessary result of the general fall in prices and the decreased commercial activity, and partly owing to lower rates of interest on the Gold Standard Reserve. The former, under the headings Currency and Mint, accounts for a net deterioration of 2,27 lakhs, and the latter, under the heading Interest receipts, for a deterioration of 54 lakhs. Secondly, there are higher charges on Interest on Ordinary Debt, due to increased rates of interest payable on new loans and to the borrowing necessary for covering the deficit in the current year. Under this head, however, the net deterioration is only 1 lakh, because we have revised the basis on which interest charges are made to the Commercial Departments. This revision...has done no more than to put upon the commercial undertakings the full cost of the Government loans from which they benefited... Thirdly, there is an increased charge, under the heading Interest on other Obligations... This increase is accounted for by the larger liability for bonus on cash certificates, which is 22 lakhs higher this year... Lastly, there is the automatic increase in the provision for Reduction and Avoidance of Debt of 78 lakhs. This is a heavy item, but at this stage in India's constitutional development, when the outside world is watching closely the effect of the coming constitutional changes on India's financial stability,...it would be fatal to make any diminution in this provision. To sum up—the total deterioraton under the Finance headings is 3·76 lakhs, of which 2·81 represents the diminution of profits from currency, mainly due to the decreased volume of currency in circulation, and 95 increased net charges for debt, of which no less than 78 is due to the automatic increase in the Reduction and Avoidance of Debt provision.

" We can now survey the whole of the picture of which I have thus presented the main features. Comparing the forecast for next year with the current budget, we lose 13·16 crores in Tax revenue, 1·18 crores on Commercial Departments, and we are worse off by 3·76 crores on general Finance headings. This means a total deterioration of 18·10 crores as compared with the budget

estimates for the current year. As those estimates provided for a surplus of 86 lakhs, the net deficit, on the basis of the current year's figures for all the other items, would be 17·24 crores. This is the gap which we have to fill either by cutting down expenditure or finding new sources of revenue. To this task I must now turn.

"I propose to deal first with military expenditure—and here I am glad to say that we can put forward a substantial reduction of no less than 1,70 lakhs, bringing the figure (exclusive of the Territorial Force grant) to 52½ crores... I must explain how it is possible to make this cut. The original plan was based on a stabilized budget of 55 crores for four years from 1928 to 1932 and this was the figure included for 1928-29 and 1929-30. In my last budget speech I explained that we had arranged to lengthen the period by one year and reduce the average amount for the remaining period to 54·20 crores. We propose to repeat the same process this year, thus spreading the re-equipment programme over one additional year, so that instead of allowing for a budget stabilized at 54·20 crores for the next two years with a reduced figure thereafter, we shall have a basic figure of 53·63 crores for three years. On top of this, by taking advantage of reduced costs of various articles and savings effected by the military authorities by their economy campaign, and also by postponing part of the ordinary military engineering services, further cuts of no less than 1,13 lakhs have been made. I wish, however, to make it clear that the possibility of this economy depends partly on special savings and partly on the continuance of low prices for grain and other stores, so that it may not be possible to repeat it. This is an exceptional cut made in exceptional circumstances to meet the present emergency, and it means a retardation in the programme of re-equipment which the military authorities could not, acting purely on military considerations, have recommended. But they have proposed this special cut in order to help out the general situation... I am afraid that many desirable projects for improving barracks and providing other amenities for the troops have had to be postponed, and in many cases officers who...had been led to expect that savings would be available for such projects have had to be disappointed. The position has, however, been accepted, and I think it right that this House should know that a whole-hearted and substantial effort has been made by all the

officers concerned to help in meeting the present financial situation. A further small saving has been provided for in the Territorial Force grant, bringing the total military saving to 1,75 lakhs."

As regards possible reductions in civil expenditure, Sir George Schuster said he proposed to divide his analysis into two parts, "first dealng with...immediate practical measures designed primarily to meet next year's difficulties, and secondly, discussing the possibility of a more far-sighted and considered policy for permanently reducing the general standard of Government expenditure. I will start with the former and thus complete the budget picture. In considering this question, I must ask Honourable Members at the outset to appreciate the limitation...besetting the task. Although the Civil expenditure of the Government reaches apparently a large figure, the headings of normal administrative expenditure, which alone offer a straightforward task, are really confined to those shown in the accounts as Civil Administration and Civil Works, together accounting for about 16 crores. Even in this reduced total...the scope for action is further limited. Thus, about 3 crores out of this total represents expenditure on the North-West Frontier Province, and here, at the present moment, ...I am faced with new and irresistible demands for new expenditure. I say irresistible, for how can we resist the claim that in this centrally administered area the standard of services, education, health, etc., should be brought up to that of the adjoining and similar districts of the Punjab? Then again, there are headings like Audit,...where the needs mainly depend on what the Provincial Governments require, while there are others where expenditure represents fixed liabilities. In the case of others again, fixed and increasing commitments have been recently undertaken as part of policies approved by this Assembly. I refer to such items as Agricultural Research grants, grants to the Aligarh and Benares Universities, and the development of Civil Aviation. Apart from this, I would ask Honourable Members to appreciate the special work which is now falling on all Departments of the Central Government in connection with the constitutional reforms. Special studies and enquiries are necessary in all directions, and this work is super-imposed on that of current administration, which in itself has been greatly increased owing to the demands made on the time of officials by this Assembly... But in spite of all the difficulties, we have made a great effort to restrict expenditure

with results that are really substantial... In the first place, on departmental expenditure, we have made special cuts in the provision for contingencies and in the scale of certain allowances. These amount to 26 lakhs... Then we have drastically curtailed expenditure on works for Frontier Watch and Ward to the extent of 22 lakhs and on other special grants to the extent of about 14 lakhs. As regards Civil Works, by refusing all new major works, by slowing up expenditure on works in progress, and by severely reducing the grant for minor works, we have made a saving of 33 lakhs as compared with the current year's grant. In this way we have made special economies of about 95 lakhs, and to this may be added the automatic decrease,—owing to smaller revenue receipts,—in the Road Fund grant of 7 lakhs, which brings the total economy as compared with last year on this head to 1,02 lakhs. Apart from these definite economies, other adjustments show a decrease of 24 lakhs—bringing the total reductions up to 1,26 lakhs after allowing for several items of new expenditure in the North-West Frontier Province. Against this there must be put certain unavoidable increases and new demands... There is, first of all, the automatic growth in the pay-bill owing to the operation of the time-scale system which involves us in an extra charge of about 23 lakhs. Further, in spite of the present hard times, we have decided to include a provision of about 2½ lakhs as part of our programme for improving statistical records bearing on the economic condition of the country, while the grant to the Aligarh University will also go up by 3 lakhs. These items totalling about 29 lakhs reduce the net saving to 97 lakhs. This figure of 97 lakhs may be fairly said to represent the economy in normal civil expenditure this year; but I have still to mention two very heavy non-recurring items, which would have had to be dealt with differently if I had not been able to balance them by a wind-fall on the receipt side which I must now explain. The two items of expenditure to which I refer are 34 lakhs for the Census and 19 lakhs for abnormal capital expenditure...in connection with the plan for a State Air Service and the general development of Civil Aviation. The Census is of course unavoidable, while, as to Civil Aviation, it is necessary to carry on with this expenditure unless we are deliberately to abandon the policy which has already been accepted by this House. The special wind-fall to which I have referred is a sum of about 54 lakhs net to be

realized from the sale of the Indo-European Telegraph undertaking... For some time past, this Department has been running at an increasing loss, partly owing to wireless competition and partly as a result of the general trade conditions,...and of late the Persian Government have been pressing for the transfer of control of Persia's internal telegraph system to Persian hands... Under the settlement now reached, it will be possible to satisfy Persia's national wishes in this respect by transferring the Persian Section of the Department to Persia, while, in consideration of our agreeing to release the Communications Company from an old agreement regarding the apportionment of the receipts, India receives a cash payment of £450,000 from that Company and also transfers the liability for maintaining and working the unremunerative Persian Gulf Section to the Company. After allowing for compensatory payments to the staff discharged and for various other adjustments, we shall realise a net sum of about 54 lakhs...

"As the receipt is 54 lakhs and the provision for these two items is 53 lakhs, that gives me 1 lakh in hand to be added to the net saving of 97. Adding the resulting figure of 98 lakhs to the saving of 1,75 lakhs on the military budget, we have a total of 2,73 lakhs to put against the deficit of 17·24 crores with which I started. This therefore reduces the gap to 14·51 crores, and this is the sum for which we must provide by new taxation.

"But, before I explain my proposals for taxation, I must deal with the second aspect of retrenchment to which I have referred... In times like these, when we are asking the House to impose upon the country a heavy burden of new taxation, I recognize that Honourable Members may legitimately demand some means of satisfying themselves as to the possibility of still further and more permanent economies in expenditure... We therefore propose that ...there should be constituted a Retrenchment Committee consisting of five non-official members to be elected by the Assembly and two officials to be nominated by His Excellency the Governor-General, one of whom would be a representative of the Finance Department... Last year, when motions for general percentage cuts on all grants were moved...I emphasized to the House the danger of indiscriminate "axing"... In normal times expenditure inevitably grows from year to year. Then, for some reason or other...there is a sudden demand for retrenchment. In such cases...cuts are often made regardless of their effects,—officials

are discharged, and thereby additional pension charges are prematurely incurred,—and then, when...the crisis is past, it is found that essentials as well as non-essentials have been cut away. New men are engaged, their salaries added to the extra pension charges of "axed" officials, and in the end the net result may prove...to have been false economy. With these considerations in mind, I resisted last year the demand for indiscriminate cuts. I promised, on the other hand, that a careful analysis of the growth of expenditure in the preceding five years should be prepared... This analysis will now be available...in the form of a very full Report by the officer whom we specially appointed for this duty... The Retrenchment Committee will thus be able to start work with the assistance of much valuable material with all the preliminaries for their work carefully prepared... The primary task of the... Committee will be to investigate possibilities of retrenchment in the civil expenditure of Government... But this work must be co-ordinated with other steps in a comprehensive plan. Retrenchment in its fullest sense involves a wide range of subjects, some technical and others which now form part of the whole constitutional issue which is before us...

"Let me deal first with the Commercial Departments. As regards the Posts and Telegraphs...a special Committee...has just been appointed to examine the working of the system of commercial accounts for that Department. This Committee will throw light on...whether the account figures as now shown present a fair picture of the commercial working of the service. When that Committee has reported, the way will be open for Government to explore means...by which this Department may...be placed on a sound commercial basis... If, after that, the Assembly consider it desirable that a further search for economy should be pursued, Government will consult with them as to the best way of giving effect to this. Turning to the Railways, my Honourable colleague, Sir George Rainy, has dealt with the question of economy in Railway administration and informed the House of the steps already being taken...* Then there is...expenditure in the North-West Frontier Province... As regards Frontier defence...the Government of India have decided that the time has come...to consider whether there is any chance of saving money by a better co-ordination of irregular troops, the Regular Army, and the Air

* *vide* the latter part of this Chapter, pp. 406—411.

Force. A special Committee has been appointed to investigate this matter, and their Report should be available in a few weeks. Apart from this, I must also mention the whole field of military expenditure. Here, obviously, no substantial economies would be possible without changes in the composition and strength of the forces in India, which would raise issues, military and constitutional, of vital importance. The study of this subject cannot be undertaken independently of the constitutional issue. It is a subject which has already received special consideration at the Round Table Conference, and I would refer Honourable Members to the Report of the Defence Sub-Committee of that Conference.

"Lastly, I come to a...question...which...pervades all the others, the question of pay and conditions of service. A good deal has been said and written on this subject lately, and attention has been directed to reductions in the pay of Government servants which have recently been effected in other countries... It is an extremely difficult subject and one on which clear thinking is essential... It is often brought as a charge against British administration that India, a poor country, has been burdened with a heavy load of pay for costly officials at the top, specially British officials, and that the money required for education and other beneficial services cannot be available until this burden is drastically reduced... Perhaps...I, as one who brings an outside vision to bear on this subject, may be allowed to express the view that no country has ever had more devoted and self-sacrificing work, or...better value for her money, than India has had from her Civil Services. Their standards of work among the people, started in days when justice was not so well understood as now, have been unique, and have set an example to the whole world... If Honourable Members will trouble to compare figures for other countries, they will, I think, convince themselves that the administration of India has hitherto been carried out, on the whole, at a very low cost... In order to make the position clear, I have compiled certain figures...taken from the 1928-29 accounts, being the latest available... Taking the Civil Departments (exclusive of the Railways), the total pay of all the officials of Government, British and Indian, high-paid and low-paid, Central and Provincial, amounts to just under 57 crores. Of this sum, the Central Government's share is about 16 crores, and the Provincial Governments' about 41 crores. This total is distributed between gazetted officers

on the one side and what are called 'establishments' on the other. The term 'establishment'...covers all the clerical and lower-paid staff. Taking these two classes, the total cost of establishments amounts to 41 crores, and of officers, British and Indian, Central and Provincial, all together, and including all leave pay, amounts to 16 crores, of which the Central Government's share is just under 4 crores and the Provincial Governments' just over 12. Incidentally, I may mention that out of this total the cost of British officers amounts only to about 6½ crores. Now, if the total pay of officers, British and Indian, Central and Provincial combined, amounts to only 16 crores, it is clear that no practicable cut in this figure could produce a revolutionary change. If all salaries were cut by 10 per cent., the total saving for the whole of India would only be 1,60 lakhs, of which the Central Government would get about 38 lakhs and the Provincial Governments about 1,22 lakhs, or not more than about 14 lakhs each. Even if this cut were multiplied to impossible percentages, it would not produce an effect which could really affect the fundamental financial problem, and it is clear that, if effects which are even worth considering are to be produced, drastic reductions right down to the very lowest ranks would be necessary. This would be a very difficult task for any Government to face and one which might produce hard results for the lower-paid men. It is clearly not a case for hasty action... A very clear distinction must be made between a review of conditions for future entrants and an alteration in the position of serving officials. In the latter case too, a distinction must be drawn between cuts...in allowances or in portions of pay which, according to the terms of service, are variable, and...alterations in basic and fixed rights. Action of the former kind is easy... On the other hand, an alteration in the basic and fixed rights of serving officials is a step of an extremely grave nature. Even apart from the constitutional rights of certain classes of officers, it would be...a breach of contract, cutting at the roots of confidence in the good faith of Government, and likely to create a feeling of uncertainty in the public service which would be particularly detrimental at the present period of constitutional transition. Apart from these considerations there are others which stand in the way of hasty action by the Central Government... The Central Government cannot take action alone. Quite apart from the constitutional responsibilities of the Secretary

of State, it is also necessary to discuss the matter with the Provinces... The future of the services,—especially the All-India Services,—is a matter of constitutional importance. It has already been considered by a special Sub-Committee of the Round Table Conference, and its consideration must be continued as part of the constitutional discussions.

"I do not wish anything that I have said to be interpreted as meaning that we do not recognize that, in a case of national emergency, some sacrifice may be demanded... We are also impressed by the fact that, at the present time, the prospects...of lower price levels and lower revenue, and...of the needs of an increasing number of officials under the new constitution, demand that policy on this question should be reconsidered with far-sighted vision. For both of these reasons, some action is now called for, and what we propose is as follows:—first, so far as concerns a sacrifice to meet the present emergency, we consider that this can be most fairly put upon all classes in the form of an increase in the income-tax,—a measure which will not select the particular class of Government officials for bearing a special burden... Secondly, as regards measures for the future, it has been decided to hold a Conference on this subject in Simla...with representatives of all the Provincial Governments, at which the possibility of revising the terms of service for new entrants into the services will be explored. The field for discussion at this Conference will of necessity be governed by the constitutional aspects of the question...

"I must now turn to my proposals for new taxation. In devising a plan to deal with the present situation, it is necessary, in the first place, to make some estimate of its nature. Can we say it is a temporary emergency for which it will suffice to devise temporary expedients? Or is there a need for the permanent addition of new weapons to our armoury of taxation? The truth, I think, lies between these two views. Of the new taxation proposed this year, my view is that some at least will be permanently needed...

"This...new taxation is all confined under the heads of Customs and Taxes on Income...I will deal first with Customs. My proposals fall into two distinct classes. I have first singled out a number of items on which it has seemed that the substantive rates can fairly be changed, and secondly, I am proposing a schedule

of surcharges on other items... The heads in respect of which I propose alterations of the substantive tariff itself, are liquors, silver bullion, betel-nuts, spices and exposed cinematograph films. The liquor duties are to be enhanced appreciably; the duty on beer and the like is at present undoubtedly low relatively to those on other alcoholic beverages and will be raised by about 66 per cent., above the present level, while those on wines and spirits (except denatured spirit and spirit used in drugs and medicines) will be raised by between 30 and 40 per cent... The duty on silver bullion I propose to increase from 4 to 6 annas per ounce. The other items mentioned will be transferred from the general rate of duty (now 15 per cent. *ad valorem*) to the "luxury" rate at 30 per cent. Of the surcharges...we have...added to the 10 per cent. schedule a surcharge of 2½ per cent., to the general or 15 per cent. schedule one of 5 per cent., and to the "luxury" or 30 per cent. schedule one of 10 per cent. By far the most important of these surcharges is that of 5 per cent. on the general revenue schedule of 15 per cent... We propose for this purpose to treat the basic duty of 15 per cent. on cotton piece-goods on the same lines as the general 15 per cent. schedule and to place the surcharge of 5 per cent. on these goods also. The surcharge on the 15 per cent. schedule is expected to yield 90 lakhs for cotton piece-goods and 2,63 lakhs for other goods. Coming now to the schedule of non-protective special duties...I need only mention specially the surcharges that I propose to levy upon kerosene and motor spirit. Both customs and excise duty on kerosene are to be raised by 9 pies per gallon, while motor spirit is to bear a surcharge of 2 annas per gallon. Finally, I must explain my proposals as regards sugar. The case of sugar is a special one,... because, while I am now proposing an increase in the duty for revenue purposes, we...received, just when my budget proposals were on the point of completion, the recommendations of the Tariff Board for the protection of sugar. Although I,...in bringing forward a Finance Bill, must look at the matter entirely as a revenue question, nevertheless, it would...be absurd...to pretend that, with the Tariff Board's proposals in our hands, we can consider revenue measures with no reference...to the plan for protection on which the Government will have to take a decision at an early date. At the same time, sugar duties cannot be permanently adopted as protective measures until they have been

carefully examined by the Government and discussed, as protective measures, by the Legislature. My budget proposals must therefore be regarded purely as revenue measures which are, however, provisional in the sense that they may shortly have to take on a permanent protective aspect. Summarised, the Board's recommendations are: (1) A basic duty of Rs. 6-4 per cwt. on all classes of sugar, including sugar candy, to be imposed for 15 years. (2) An additional duty of Re. 1 per cwt. on all classes of sugar to be imposed for the first 7 years. (3) Power to be taken to add 8 annas per cwt. to the duty at any time if the landed price of sugar at Calcutta *ex*-duty falls below Rs. 4 per maund. (4) No protective duty on molasses. My own proposals for revenue purposes had been...an extra duty round about Re. 1 to Rs. 1-8 per cwt. What I have now included is an increase of Rs. 1-4 per cwt. on all grades of sugar... The combined effect of all these proposals as regards Customs duties will be to produce an additional revenue next year of 9·32 crores. We shall also obtain about 50 lakhs more from the increased import duties on galvanized pipes and sheets which the House discussed on 28th January last. This will raise the additional yield to 9·82 crores. Incidentally, the new duties, which will operate from 1st March, and the increased duties on galvanized pipes and sheets, which came into force on 30th December, will add to our revenue for the current year a sum estimated at 88 lakhs, thus reducing the current year's deficit to 12·68 crores.

" I must now deal with Taxes on Income... My proposals...are as follows. The taxable minimum income for income-tax,—Rs. 2,000,—will not be lower. The rate of tax on the lowest zone, up to Rs. 4,999, will be raised by 4 pies. The rates on higher grades up to Rs. 39,999 will be raised in some cases by 5 pies, in some cases by 6 pies, and in the highest of these grades by 7 pies. At present the highest rate is reached at Rs. 40,000. It is now 19 pies. I propose a rate of 25 pies on incomes from Rs. 40,000 to Rs. 99,999, and a maximum rate of 26 pies on incomes of Rs. 1 lakh and over. The estimated yield of these increases is 5,07 lakhs gross or, deducting 53 lakhs on account of increased refunds, 4,54 lakhs net. In addition to this, I propose certain changes as regards super-tax. At present all assessees except Hindu undivided families are allowed a deduction of Rs. 50,000 in computing the income liable to super-tax. This will be lowered to Rs. 30,000 except for Hindu undivided families and

Companies which will be allowed, as at present, a deduction of Rs. 75,000 and Rs. 50,000, respectively. In the new zone, Rs. 30,001 to Rs. 50,000, the super-tax rate will be 9 pies. Above Rs. 50,000 the graduated scales will be increased by 2 pies throughout. The flat rate for Companies will be 1 anna as at present. These changes will yield, it is estimated, 46 lakhs. Thus the total estimated additional net revenue from Taxes on Income will be 5 crores... The total yield from the proposed changes in Customs duties and Taxes on Income thus amounts to 14·82 crores, as against which the gap to be filled is 14·51 crores, so that I am left with a small surplus of 31 lakhs.

"From this balance I wish to preserve the possibility of making certain grants for beneficial purposes. It is particularly the desire of the Government to support schemes for the encouragement of the sugar industry, and there are certain schemes which may shortly be put before us by the Imperial Council of Agricultural Research which may require a provision of 5 to 10 lakhs next year. Then again, there is the question of the establishment of a Central Committee for Jute... The financial basis of the plan would be that Government should make some reduction in the rate of the jute export duty, and legislate for a corresponding amount to be levied as a cess for financing the Jute Committee. The total sum contemplated as required for this is estimated at about 5 lakhs annually... It is for the various jute interests concerned to agree to the scheme which has already been worked out, and Government stand ready at any time to help financially...

"That concludes my account of the measures for balancing the budget, but before I turn to explain our borrowing programme and the ways and means position I wish to make certain general observations on the whole plan of new taxation. As regards the customs proposals...they involve, of course, a substantial addition to the cost payable by consumers; but...prices are low, and...it is for this very reason that additional percentages in our duties are necessary... We shall not in fact be raising more in this form of taxes than was to be expected...in a normal year, while, as far as Indian industry is concerned, the general effect of the new duties should be beneficial. It is necessary for me to make special reference to the proposed increase in the tax on silver... The increase...is a clearly justifiable form of raising revenue... The only possible objection to it might be based on...a fear that it might

tend to check consumption of silver in India, and thus further weaken the price... Similar apprehensions were expressed...last year when we imposed the duty of 4 annas. But although this weakened the price for a few days, the market almost immediately recovered, and...the consumption of silver in the current year is keeping up to the normal level... India's consumption should not therefore this year be seriously affected by the increased duty, while as regards helping to maintain the price of silver, we are prepared to consider action in other ways. I announced in my budget speech last year that the Government of India would be prepared to co-operate with other silver interests if any practical scheme could be devised for controlling the production of new silver and the sale of new and existing stocks. Unfortunately, the only response...has been...by representatives of the main producing interests in America. In general, these gentlemen propose that their own production of new silver should remain unrestricted, but that Governments and others who hold large stocks of silver should refrain from realizing their holdings, and leave the world's markets free for the new production... The demand that the Government of India should refrain from selling is...astonishing ... For, in fact, the whole world depends on India as a consumer. In the five years ending March 31, 1930, India absorbed about 540 million ounces of silver or 108 million ounces per annum... As against this, the Government of India have sold out of their own holdings a total of only about 90 million ounces since 1926. Yet it is suggested that even this moderate realization is to stop, and that India is to...keep her own home market free to absorb the production from the mines of Mexico and the United States. This is clearly an unacceptable idea... We must also ask ourselves whether co-operation is likely to lead to the desired result... The fall in silver prices...has not really been out of relation to that... of other metals. Taking the price of silver, tin, lead, spelter and copper on March 31, 1926, and treating these prices as 100, the figures...at the end of January 1931 were 46·3 for silver, 41·4 for tin, 44·8 for lead, 38·1 for spelter and 78·1 for copper. Therefore, with the exception of copper, all these metals had fallen more than silver... These facts...indicate that, although a fall in silver prices may have wider results,—owing to its currency uses,—than a fall in the prices of other metals, nevertheless, the causes of that fall may be the same. Any action which does not

touch the causes of the disease is hardly likely to provide a sound remedy... As to the income-tax proposals, I wish to make clear that we regard these very specially as measures designed to meet the present emergency, but not necessarily permanently required,—...as...a provisional defence...behind which the situation can be studied and more permanently consolidated. We want during the next year to consider, first, whether we have to face a permanent reduction in our general revenues due to a permanent lowering in prices all round, and whether, as a result of this, there is any means for permanently reducing the cost of Government; secondly, how our plans for distribution of revenue to Provincial Governments under the new constitution can be fairly adjusted; thirdly, whether any alternative methods of raising revenue can be devised which will be less hampering to the economic life of the country... In the meanwhile, the proposals represent...a sacrifice to be imposed, in order to meet the present emergency, on all the monied classes...and falling especially with unerring aim...on the whole class of Government officials. So far as these officials are concerned, the increased levy operates as a cut in salaries. I do not, however, attempt to conceal the fact that, by achieving such a purpose in this way, the Central Government is in a sense benefiting at the expense of the Provincial Governments, and, for this reason, our earnest attention will be required during the forthcoming year to devise measures for some other means of adjusting the position. I must at this stage, mention two other measures as regards income-tax which are under consideration by Government. In the first place, there is the question of allowing assessees to set off against business profits losses incurred in preceding years. I explained in my last budget speech that, if the revenue position made it possible, it was our intention to make a start in the introduction of such a provision,—but that we had to be guided not so much by considerations of principle, as by the practical conditions as regards revenue. It would mean a substantial loss of revenue, and the question for us is whether the country can afford it. Unfortunately, we cannot at present rely on having any margin for sacrifice... In these circumstances, we feel that...before we can take action...the revenue position...must show signs of improvement... The second point...is this. It has for some time been apparent that there is a serious *lacuna* in the existing provisions for taxing income from foreign investments. In fact, our law

affords a direct incentive to investors to place their money in foreign securities for the sake of avoiding income-tax... We intend to introduce legislation this session for the taxation of income from foreign investments on the lines of the law now prevailing in the United Kingdom. This legislation, if passed, may bring in some additional revenue, but I have not made any allowance for this in the budget estimates. Our primary purpose will be to remove an incentive towards the export of capital which is extremely detrimental to Indian interests.

"I will now turn to a review of the ways and means position for the current year and the next... In the budget for 1930-31, I estimated that a loan of 23½ crores in India, together with borrowings in London to the extent of £6 millions, would enable Government not only to meet the excess of disbursements over receipts but also to reduce the amount of treasury bills outstanding in India by 4 crores. The position now is that in spite of a loan of 29·71 crores in India and sterling borrowing amounting to £31 millions...it is estimated that the amount of treasury bills outstanding with the public in India at the end of the year will be 45 crores, *i.e.*, 25 crores in excess of the amount shown in the budget. The total real deterioration is therefore nearly 64½ crores. The main reasons for this exceptionally large deterioration are first, the increased demands for finance made on the Government in their capacity as bankers for the Provincial Governments and the Railways. Secondly, diminished receipts from Savings Bank deposits and Post Office Cash Certificates. Thirdly, the deficit on the Central Government Budget. And, lastly, the effects of the withdrawal of redundant currency from circulation by contraction... The ways and means programme for next year is necessarily tentative and subject to modification... The Railway capital expenditure has again been drastically reduced, the provision for 1931-32 being 11·45 crores compared with 16·75 crores in the current year. As regards the Provinces, their borrowing programme has also been rigidly controlled so far as new works are concerned, but, in present circumstances, they have certain unavoidable financial requirements. Provision for their demands has, however, been reduced from 11½ crores anticipated this year to 9½ crores. With this reduced provision for Railway capital expenditure and for the Provinces, I estimate that the total amount of new money required will be 7¾ crores only. Assuming that all this

new money required is raised in India, and that 7¼ crores of 6 per cent. 1931 rupee bonds are converted, a total loan of 15 crores only would be required. So far as sterling operations are concerned, I assume that the £15 millions outstanding from the 5½ per cent. 1932 loan maturing in January 1932 will be converted. Given normal conditions as regards borrowing and remittance from India, no further sterling loans will be required... The estimate which I have just given for the borrowing required in India, assumes that the amount of treasury bills outstanding at the end of the year will be the same as at the beginning, *viz.*, 45 crores. I hope, however, that conditions will be sufficiently favourable to enable Government to fund a portion of this floating debt... In my general review of the financial position to which I shall shortly turn, I shall again have to refer to the fact that a substantial export of capital has characterized the period through which we are now passing. This export, occurring at a time when normal trade is depressed, has seriously curtailed the ability of the Government to make remittances through the market, and funds have been obtained in London mainly by sterling borrowing... For next year, assuming that £15 millions outstanding on account of the 5½ per cent. 1932 loan are converted directly or indirectly, I estimate that the net requirements of the Home Treasury will be £33⅓ millions inclusive of £2·4 millions for Railway capital expenditure. With a reversion to normal conditions in the political sphere, and a restoration of confidence in the future stability of India under the new constitution, there should be no difficulty in obtaining this sum by remittance through the market. The future in this respect lies really in the hands of responsible Indian leaders.

"Before leaving this subject, I feel it necessary to put before the public a general review of the Government's currency policy, and its effects on the financial situation. Much misapprehension exists in the public mind on these questions. The main charges which are made against the Government are that their currency policy has, first, by excessive contraction, created a shortage of currency in the country producing a fall in prices; secondly, resulted in the Government incurring a heavy floating debt with serious loss to revenue; thirdly, increased the difficulties of the business world by the artifical creation of dear money; and fourthly, reacted on the credit of India and led to costly sterling

borrowing. I wish to deal with all these charges and to explain ...the manner in which our duties as currency authority have unavoidably reacted...on our financial position. I will take them in order, beginning with the charge of contraction. Here I must at the outset emphasise two points. First, that the reduction in the volume of currency in circulation is by no means excessive, having regard to the fall in prices and the diminished money value of business transactions. Secondly, that India plays a minor part in the world action affecting prices... Our contraction, therefore, has been a necessary consequence of, or sequel to, the fall in world prices. It cannot be regarded as a cause of that fall... Now, as to the extent of our contraction, I believe that an impartial observer, far from saying that this has been excessive, would be more likely to take the contrary view and criticize Government as currency authority for not having contracted currency sufficiently... According to the evidence tendered to the Currency Commission, the amount of rupee coin outstanding on the 1st April 1926 was 350—400 crores, of which 77 crores were held in the Paper Currency Reserve, while the note issue on that date amounted to 193 crores. The total amount of currency in circulation at that time, therefore, taking notes and silver currency together, was somewhere between 466 and 516 crores. Between 1st April 1926 and 31st December, 1930, the return of rupees from circulation amounted to about 64 crores, while the note issue on the latter date was 161 crores, so that the total amount of currency in circulation was about 370 to 420 crores. That is to say, since April 1926, there was a reduction of 18 to 20 per cent. In the same period the Calcutta index number of wholesale prices fell 31·5 per cent., that is to say, from an average of 148 in 1926 to 101 in December 1930. The percentage reduction in the amount of currency in circulation is therefore small in comparison with the percentage reduction in prices... I now come to the second charge. This is no more than a complaint about what in fact is an inescapable result. For it is unavoidable that contraction of currency should have an adverse effect on Government finances when the Government are the currency authority... The effect is seen in the form of...a drop in the amount of treasury bills held in the Currency Reserve, the discount on which comes back to the Government as currency profits, and...an increase in the treasury bills held by the public, on

which, of course, the discount goes to the public... Government have no choice in the matter if they are to perform their first duty as currency authority,—the duty of maintaining stability of the currency. I now come to the third charge... While contraction of currency has been the normal sequel to the fall in world prices, there would have been no necessity for maintaining rates of interest in the money market at such a high level if there had not been...other reasons...special to India... The disturbance created by the Civil Disobedience Movement, combined with the general uncertainty as to the political future of India and the effect of constitutional changes, has created a general feeling of nervousness among Indian investors and caused a considerable flow of capital from India... An examination of the trade figures and the Government remittances gives some idea of its magnitude. The visible balance of trade in favour of India for the nine months April to December 1930 was 34·43 crores as compared with 41·62 crores in 1929 and 39·76 crores in 1928. This figure is...having regard to the abnormal fall in the world prices for India's exports, remarkably favourable... It would have been legitimate to expect that...Government would have been able to effect large remittances to London; but the actual facts are that during the last three months, Government have had to make considerable sales of sterling to meet demands for private remittance and these sales have practically balanced purchases made earlier in the year. This phenomenon must be ascribed almost entirely to export of capital... Now, this is a process which the Government of India...are bound to fight... In order to check this export of capital and attract money to India for investment, they have taken the measures which the currency authority of every country is bound to take in similar circumstances...and have had to maintain interest rates at a higher level than would otherwise have been necessary, and...to draw surplus funds off the market by issue of treasury bills at expensive rates. This policy has, of course, inevitably not only had an adverse effect on Government finances but has also reacted unfavourably on private traders; but it has been forced on the Government by those private interests who...are sending money out of the country. This brings me lastly to the fourth charge... It is, of course, true...that high rates in the money market have a tendency to depress the price of Government securities. But this is no more than a general tendency, and in the case of India,

high rates for short money this year have certainly not been a major factor in the security market... The experience of recent years shows clearly that, with an effective bank rate of 7 per cent., the long term Government securities may quite well be selling on a 4½ per cent. basis... We must look elsewhere for the main cause of the decline in Indian securities. Their prices have, in fact, been governed almost entirely by political factors. It is of course inevitable that, with great but uncertain constitutional changes hanging over the whole position, the price of securities should fall... On top of this, however, the effect of uncertainty has been enormously increased by some of the aspects of the Civil Disobedience Movement. I do not...share the general lack of confidence in the future, but...the changes now under discussion are sudden and vital and...the outside world must get accustomed to new ideas, and, in the meanwhile, demand some proof or guarantee for the new order.

"If, for these reasons, safeguards are proposed, their object is the maintenance of confidence and credit until the new order has proved its stability. In these circumstances, the best service that representative Indians can render to their country is to convince the world that safeguards will never have to be called into play, and this they can best do by joining us in a common effort to work out means both for solving the problems of the immediate future and for effecting, without shock or weakening, the coming change in the foundations on which the whole structure of Government depends... At this point there will, of course, occur to many the well-known argument that it is only because the Government are maintaining the so-called "unnatural ratio" of 1*s*. 6*d*. that all these difficulties are being felt... But every single one of the steps which we have had to take this year in the way of contraction of currency to meet the fall in world prices would have been equally necessary in order to maintain stability of exchange, whatever the level at which the ratio had been fixed. If the rupee had been stabilised at 1*s*. 4*d*. in 1926, the present fall in world prices would have been felt in India with exactly the same severity, and similar contraction of currency would have been necessary. Those who,...to meet present difficulties, are pressing for a change in the rupee ratio, are really asking...not for a mere change from 1*s*. 6*d*. to 1*s*. 4*d*., but for a completely unstable currency as opposed to a currency stabilized in relation

to gold... I can imagine no course more fatal to India's financial well-being than to make a change in the currency system now... There is no question...of choosing between 1*s*. 6*d*. and 1*s*. 4*d*. It is a choice between a stable currency and complete instability. If once the country, having adopted stability and accepted a statutory obligation, repudiates that obligation in order to meet difficulties of the moment, what confidence can any one have... that such a step will not be taken again?... In any case, it would be madness to risk a change amidst all the present uncertainties, when the old foundations on which the present India has been built up are to be withdrawn, and when the economic crisis is unsettling the whole world. It would be nothing less than a breaking away of the ship from its anchorage and letting it drift all unprepared into the storm...

In conclusion, I would wish shortly to summarize the position as I see it... Confronted with a large deficit, we have made proposals which are, I venture to claim, adequate to meet the present situation, and which, while fairly distributing the burden which it is necessary to impose, may have some results not unpropitious for the development of Indian industry. But the work must not stop there, nor can we rest satisfied that permanent provision has been made for the future... The main task falls under three heads,—the development of new sources of revenue, the reduction of expenditure wherever waste can be eliminated, and the formulation of a constructive policy to help the economic productivity of the country. As an example of new sources of revenue which demand special study, I would specially refer to the consumption of tobacco, the consumption of matches, and possibly also to death duties... As regards tobacco, I may take this opportunity of expressing my appreciation of a very valuable Memorandum which I have received from the Chairman of the Bengal National Chamber of Commerce, containing a study of the operation of a tobacco monopoly in other countries and suggesting the introduction of such a system in India. This is a matter which has often been considered, but never, I think, pursued to the end, and we are now consulting Provincial Governments as to setting up a special Committee to study the question this year. Then as regards matches. The question of imposing an excise duty on matches is also no new one. But, for various reasons, until there can be established some form of economic union between

British India and the Indian States, providing for joint action on such matters, this source cannot be developed to produce important sums of revenue. The possibility for such joint action will, I hope, be provided under the Federal constitution for India which has now come within the horizon of practical politics... As to the...reduction of the scale of expenditure, I have already explained what is to be done,—the appointment of a Retrenchment Committee for the Central Government, the appointment of a special Committee for Posts and Telegraphs, the action contemplated by the Railways, the holding of a Conference with Provincial representatives to consider the question of future rates of pay, and, combined with all these, the continuance of the constitutional discussions. As to...a constructive policy to help the economic development of the country, this is so wide a subject that it is more difficult to define exact proposals. At the moment, and for the sake of attaining immediate results, world conditions are of such dominating importance, that some kind of international action seems necessary... I believe that India could play an important part in such international action. If we turn from that to consider our domestic possibilities, the greater part of the field of action lies with the Provincial Governments, but I myself hope that the Banking Enquiry Committee, whose Report should now shortly be available, may open up for us in the Central Government some lines of action. Connected with the subjects with which the Banking Committee are concerned, are two which have always seemed to me to be of dominating importance for India,—the proper organization of the marketing of Indian agricultural produce and the development of the Co-operative Movement... Apart from the Banking Committee's recommendations, there are several matters now before us,—the Tariff Board's Report on Sugar, the creation of a Central Jute Committee, and the Tariff Board's Report on Salt, while...we have also been studying the question of setting up an organization for the better study of economic questions. We hope to receive Sir Arthur Salter's Report in the course of the next few weeks, and to publish it immediately. All these measures represent small parts in the task which lies before India in this matter. We in the present Government appreciate the task, but I would ask the public also to appreciate our special difficulties at the present juncture. We are in a sense in the position of managers of a business, for which

a change of management is under discussion. On the one hand, whatever steps we take now will affect the position of our successors; on the other hand, the value of the steps which we may take depends on how far our successors will be guided by those principles on the maintenance of which the success of any policy depends... I can hardly imagine that, in such circumstances, the new proprietors would say: "those whom we are succeeding are our enemies; we will try to trip them up at every turn and make their conduct of the business a failure."... Co-operation is particularly necessary just now, for the business which is to be transferred is having to face very adverse world conditions and to go through very difficult times. Moreover, the very anticipation of the transfer is affecting its credit, because the world has not yet had the opportunity to gain confidence in the new managers. The simile which I have used gives, I think, not an untrue picture of the present position, and I hope that my words may cause the public and particularly the leaders of commercial opinion in this country to ponder on what it means to all of them ..."

By means of this condensation of Sir George Schuster's speech we have now presented the reader with as clear and comprehensive a picture as is possible of the financial events of the year. But before we bring this Chapter to a conclusion there is one other matter that requires discussion. This is the Railway Budget, which was presented to the Legislative Assembly by the Commerce Member, the Hon'ble Sir George Rainy, K.C.S.I., K.C.I.E., on the 17th of February. For the assistance of those readers who are unacquainted with previous editions of this Report two preliminary facts must be explained; the first,—to which we have already drawn attention in Chapter IV,—is that by far the greater part of the railway system in this country is managed by the State, and the second, that although for many years the railway finances formed part of the general finances of India, this is now no longer the case, and accordingly two budget statements have to be presented annually in the Assembly. The separation of railway finances from the rest was effected in 1924, as a result of the recommendations put forward in the report of the Acworth Committee, in which strong emphasis was laid on the disadvantages of a system whereby the development of the railways was subjected to substantial and incalculable fluctuations from year to year, in accordance with the changes in the Central Government's

financial position and the general conditions of trade which happened to prevail throughout the country. In such circumstances continuity of policy was proving impossible, and waste and confusion ensued. As a result, a scheme was devised which enabled the railways to be financed simply as a business undertaking, and which, incidentally, relieved the Government of many awkward problems. The arrangement entailed the contribution to the Government of a definite annual sum by the railways, which was to be the first charge on their net receipts. The balance, after payment of this contribution, was to be placed to railway reserves on the condition that if, in any one year, the amount available for transfer to reserve should exceed Rs. 3 crores, one-third of the excess should be paid to the general revenues. The railway reserve was to be used to secure the payment of the annual contribution to general revenues, to provide, if necessary, for arrears of depreciation and for writing down and writing off capital, and to strengthen the financial position of the railways in order that the services rendered to the public might be improved and rates reduced. The effect of this arrangement in general has been that the State, and thereby the Indian tax-payer, is now practically assured by the railways of a regular annual return bearing a reasonable relation to the amount of public money expended upon them; while the task of maintaining a continuous financial policy and of distinguishing between a temporary and permanent surplus or deficit in accounts is immensely facilitated.

In introducing his budget Sir George Rainy said:—" When the Budget which I presented to the House last year was prepared, our weekly earnings had shown an upward tendency and we expected to close the year 1929-30 with a gain from commercial lines of just over 7 crores. Though this sum would not have been sufficient to cover the whole of the loss on the strategic lines *plus* the contribution to general revenues, we hoped that it would be possible to pay the full contribution without drawing more than Rs. 86 lakhs from the Reserve. But the improvement was short-lived, and in February and March last the effect of the world-wide trade depression began to be reflected in our traffic earnings, while earning power was further impaired by the serious strike which broke out on the Great Indian Peninsula Railway... Though the strike...ended in April, the trade depression has become more acute with the passage of the months, and the reflex

effects of the Civil Disobedience Movement have accentuated the decline in trade. We budgeted for total receipts from all sources of 109½ crores and total expenses, including interest and all other charges, of 103¼ crores. We now expect that the total receipts will not exceed 96¾ crores, a reduction of 12¾ crores, while our total charges, though 1½ crores below the original estimate, are likely to amount to nearly 102 crores. As a result, we are faced with a loss of 5 crores 12 lakhs, in addition to which we have to find 5 crores 74 lakhs as a contribution to general revenues. It is, therefore, necessary for us to withdraw 10 crores 86 lakhs from the Reserve, instead of, as we hoped, adding 34 lakhs to it... The deficit of nearly 11 crores...means...that the earnings of the railways fell short of the amount necessary to provide for full interest charges by 3 crores, the loss on the strategic railways was 2¼ crores and the contribution to general revenues 5¾ crores. It has always been recognized that the loss on the strategic railways is a fair charge against general revenues rather than against the earnings of the commercial lines... It was also recognized that we could not expect in bad years to be able to earn our full contribution to general revenues, and on this account the Reserve Fund was created out of the profits of the years of prosperity... Therefore...looking at our commercial lines purely as a business proposition and ignoring for the moment the loss on strategic railways and the contribution, the loss on the commercial lines is only 3 crores. When the adverse circumstances of the current year are taken into account and allowance made for a change in accounting procedure which increases the expenditure under the head 'Interest' to the extent of about one crore,...unsatisfactory though the results are, I do not think they give ground for unmixed pessimism...

"Turning now to the details of our earnings and expenses, the total falling off, as compared with the actuals of 1929-30, is 8¼ crores, of which about 3 crores comes under passenger and other coaching traffic earnings and 5¼ crores under goods and other earnings... On the expenditure side, we expect a saving, as compared with 1929-30, of about a crore. This figure, however, does not do full justice to the efforts at economy which have been made, for the allocation to the Depreciation Fund has automatically risen by nearly half a crore while the amount deducted on account of worked lines accounts for a similar sum. On the expenditure

side under the two main heads 'Repairs and Maintenance' and 'Operation', the reduction in gross working expenses amounts to about 2,35 lakhs. Of this sum, 84 lakhs is due to certain arrear adjustments with the Depreciation Fund, and the actual reduction of expenditure under these two heads is approximately 1½ crores. As usually happens, in a bad year the revenue fell off much faster than the expenditure could be reduced, and it will be necessary to carry on a vigorous economy campaign during coming months...

"Our budget for next year assumes total receipts from all sources of 102½ crores and total charges of 101¼ crores, leaving us with a net gain from all lines of 1¼ crores. Our contribution to general revenues is 5 crores 36 lakhs, and to meet it we shall have to draw 4 crores 15 lakhs from the Reserve... Compared with the revised estimate, we hope to get from strategic lines 12 lakhs more in receipts and reduce our expenditure by 13 lakhs, while the interest charges should not go up by more than 2 lakhs. Owing to the poor results of the current year, we shall have to pay away 40 lakhs less in surplus profits, and we hope by economical working to reduce our miscellaneous charges by 8 lakhs. The total of these three items—strategic lines, surplus profits and miscellaneous charges—is a betterment of 71 lakhs. Against this we shall have to pay 80 lakhs more in interest on commercial lines owing to the increase in the capital at charge, while owing to the depletion of our Reserve Fund balance we must expect to receive 16 lakhs less in interest on our balances. Our share next year of profits from subsidized companies and from branch lines in which we have invested, depends chiefly on the results of this year, and is likely to be down by 5 lakhs. Against the betterment of 71 lakhs, we have therefore to set a deterioration of 101 lakhs in the other items I have mentioned... On the commercial lines we estimate the gross traffic receipts at 99½ crores against 93½ crores in our revised estimate... We anticipate an increase of about 2 crores from minor alterations in rates and fares, and for the rest, the estimate assumes that the latter part of next year will show some improvement in traffic. To make up the balance of 73 lakhs required if we are to obtain an improvement of 6,63 lakhs in the working results of the commercial lines, we have to look to a further reduction in working expenses. Actually, however, the reduction needed amounts to 1,94 lakhs, for the allocation to the Depreciation Fund goes up automatically by 37

lakhs, and the fortuitous credit of 84 lakhs to revenue from that fund in the current year will not be repeated. This reduction of Rs. 1,94 lakhs will have to be achieved notwithstanding the fact that we hope to handle more traffic in the cold weather of 1931-32 than we did this year, and notwithstanding the additional expenditure involved by the bringing into force of the hours of work conventions, the additional mileage to be opened, and the recent increases in the wages of the lower-paid employees. The savings we anticipate fall under three heads: (*i*) Rs. 30 lakhs by reduction of establishments and contingent charges coming under the head of Administration; (*ii*) Rs. 1,57 lakhs by measures to reduce the cost of repairing and maintaining track and buildings and their equipment; and (*iii*) Rs. 2 lakhs only under Operation, where we have to provide 25 lakhs more for fuel. We are also expecting a larger payment by Rs. 5 lakhs from Companies and Indian States whose lines we work for them...

" At this point it may be natural to enquire whether there is a reasonable prospect of attaining these results. So far as the reduction in expenditure is concerned, I am confident that, with the good-will of all concerned and the strenuous efforts to effect economy which I know are being made on all railways, we should be able to reduce our expenditure to the extent contemplated. On the revenue side, the issue is of course much more uncertain. At the best of times the forecast of the earnings of the coming year is largely guesswork, and under the abnormal conditions existing to-day the difficulty of making an estimate is very greatly increased. Almost everything of course depends upon whether the latter part of the coming year may see some lightening of the trade depression. Railway traffic figures are always a most sensitive barometer of the fluctuations in trade, and the effect on railway revenues of any increased movement of goods and passengers would be immediate. It was only after a most careful consideration that I accepted the budget estimate of next year's earnings, but I think that, without being unduly optimistic, we may reasonably hope that next year's figures will show some improvement on the results of the current year. There is, however, one essential condition to be satisfied if our hopes are to be fulfilled. The restoration of peace in the country and the abandonment of methods of agitation which directly hamper and reduce trade are indispensable, if any real improvement is to take place...

" The financial situation of the railways being such as I have attempted to describe, it is of course obvious that the most urgent duty of all concerned in their administration is to promote economy and bring about a reduction in working costs. To a limited extent savings occur automatically, because if fewer trains are run, less coal is burnt and a reduction in the operating staff becomes possible. Much more than this, however, is needed, and...on page 9 of the Railway Board's Memorandum Honourable Members will find an indication of the directions in which it is hoped that costs can be brought down,—as for example, the reduction of redundant establishments, the restriction of contingent charges to what is absolutely necessary, and the cutting down of the standard of repairs and maintenance to the utmost extent possible, subject always to the proviso that, where safety is in question, no risks can be taken and the track and rolling stock must be maintained to the extent necessary to protect the public. We feel that at this juncture our primary duty is to stop up the hundreds of loopholes through which money is apt to leak away in times of prosperity, and we hope that the reduction in expenditure will come not from half a dozen large items, but from an immense accumulation of small items, the aggregate of which may be very substantial... I believe that this method of securing economy is of first class importance...and for the next few months I should like to see the energies of the whole staff of the railways from the Agents downwards concentrated on this vitally important task. It is indeed one of the advantages of a period of depression that the necessity for economy is imperiously enforced upon all concerned, and they have to set their wits to work to cut their coat according to their cloth. The method we are adopting to bring home to railway officers the position which has to be faced is that of rationing. The Railway Board do not propose to distribute to Agents the full sums provided in the Budget, but something less, and no further allotment will be made until conclusive reasons have been given. Agents will treat their heads of departments and the heads of departments their subordinates in exactly the same way. It should be possible, I believe, to effect in the course of a few months very substantial savings indeed.

" At this point, Honourable Members may ask:—' will these efforts at economy bring about the desired result?...By March 1932 the Reserve Fund will have been reduced to negligible pro-

portions and the railways will be operating on a very narrow margin. In those circumstances are not more drastic remedies called for?' These are most pertinent questions, and...in the contingency contemplated, it...might be advisable...to examine the possibility of more drastic and far-reaching economies than any we have yet contemplated; but any Committee appointed for this purpose would have to consist mainly...of experts, because when we are dealing with a Department which is largely technical, it is only those who understand the whole position...who can deal with the question efficiently and expeditiously... When in the case of a Commercial Department like the railways there is a wide gulf between earnings and expenditure, three questions naturally suggest themselves. Is it possible in the altered circumstances to restore solvency by a reduction in the scale of wages and salaries, or by an increase in rates and fares, or by a reduction in the taxation imposed on the undertaking? The last point may be briefly dismissed for the moment. Undoubtedly, if the fall in the general level of world prices proves to be permanent, the question whether the railways can continue to contribute towards general revenues on the scale on which they have been contributing for the last seven or eight years will have to be reviewed as well as a great many other questions, but it does not immediately arise in connection with this Budget. The other two points are of greater importance and require somewhat fuller examination.

"The question of the possibility of a reduction in the scale of wages and salaries on the railways has already been mooted in more than one quarter, and it is necessary to state clearly the view which Government take. Hitherto the complaint has been that the scale of wages, so far at any rate as the lowest class of railway employees are concerned, was inadequate and that measures were necessary to bring about an improvement... An immense amount of work has been devoted during the last two years to reviewing the scales of wages in force on almost all the State-owned railways in India, and to preparing schemes in order to ameliorate conditions. The ultimate cost of the schemes for the revision of wages already sanctioned is about Rs. 32 lakhs per annum, and the bulk of the railway servants covered by these schemes draw pay not exceeding Rs. 30 per mensem... In so far as we are dealing with this class of establishment...I think that

this House should be slow in arriving at the conclusion that any reduction in wages and salaries is feasible. Unquestionably these low paid servants of the railways must have gained substantially by the fall in prices, but before any question can arise as to a reduction in the scales of pay recently fixed, it should be shown that the new level of prices is likely to be permanent... If we exclude the large class of railway servants who draw less than Rs. 30 a month, the cost of the remaining establishments is about 25 crores a year, so that a ten per cent. cut in wages and salaries would mean a saving of 2½ crores. Out of the total, the salaries of gazetted officers amount to only 2 crores a year and a ten per cent. cut would give us only Rs. 20 lakhs. I have not been able to ascertain with accuracy the cost of the upper subordinate establishment, that is, of subordinates drawing Rs. 250 a month and over or on scales of pay rising to Rs. 250 a month and over, but probably Rs. 7 crores a year is an outside figure... A ten per cent. cut in salaries applicable only to the gazetted and upper subordinate establishments would yield therefore a sum substantially less than Rs. 1 crore a year. It will be obvious from these figures that if a really substantial saving in expenditure is to be effected, the reduction will have to go right down the scale excluding only the lowest paid establishments of all who seldom draw more than Rs. 30 a month. It may be that this question will have to be faced...but I think it is clear that when we are dealing with large bodies of Government servants on comparatively low rates of pay...it would be unfair to single out this Department alone for special treatment... I turn now to the question of rates and fares. The question whether a deficit in the Railway Budget could be rectified by a general increase in rates and fares has been fully considered, and a number of minor alterations—all of them I think within the powers of the Agents—have already been made and will be brought into force. As I have said...we hope to get about Rs. 2 crores in the coming year from these increases, but our examination of the question has made it evident that so long as the acute stage of the world trade depression persists, it is exceedingly doubtful whether a general increase in rates and fares would in fact lead to an increase in earnings... I find that during the last three years the third class passenger fares amount to very nearly 88 per cent. of the gross earnings from passenger traffic and in the three upper classes to

little more than 12 per cent. I find further that between 1927-28 and 1929-30 the earnings from passengers carried in the three upper classes fell by from 6 to 8 per cent., whereas the earnings from the third class passengers fell by only one per cent. The inference to be drawn is obvious, namely, that as prosperity conditions began to pass away and the impending trade depression grew nearer, there was an immediate tendency for passengers to travel a class lower than they had hitherto been accustomed to do... If therefore the Government of India were now to increase the fares of the three upper classes, I am afraid the only result would be to accentuate the tendencies which had disclosed themselves even in 1929-30...with the result that the fares indeed might be higher but the earnings much the same, if not lower. It follows that, if it were considered necessary to increase passenger fares, the increase would have to be general and applicable to the third class passengers. I do not say that it may not become necessary to face a general increase in third class fares, but before any decision is reached, two questions would require very close examination, namely, the limit imposed by the competition of the motor buses and the effect that the increase in fares might have on the total number of passengers travelling... What I have said applies also to any general increases in the freight on goods. Here the considerations to be borne in mind are more complicated, but substantially the position is not very different. At a time when the purchasing power of the cultivator is narrowly restricted, even small increases in rates might have adverse effects on traffic and the gain to railway revenues from the increase might prove to be illusory...

" It is not only from the point of view of obtaining a larger revenue that railway freight rates have come under review during the last few months. The general fall in world prices of agricultural produce has had a most serious effect on the position of the cultivating classes in India, and notwithstanding the very grave position of the railway finances we have had to consider whether it was possible to reduce the railway freight on agricultural products. The products which have been specially examined are rice, wheat, oilseeds, and cotton... About three months ago a reduction of nearly one-third was made in the railway freight on wheat to Karachi and as this route is the cheapest route from the Punjab Canal Colonies to Bombay, the reduction

affected that centre also. Recently by arrangement with the Punjab Government a similar reduction has been made in the freight on wheat to Calcutta. Meanwhile, however, there has been a change in the relative level of prices. Indian wheat in the Punjab now stands at a price well above export parity, and so long as this condition of affairs exists, no reduction of railway freights which is practically feasible can lead to the export of wheat from India. As for rice, this is mainly a Burma problem, and the report which was called for from the Agent of the Burma Railways is now under examination. So far as oilseeds are concerned, the case stands thus. The ground-nut crop which is grown mainly in the South of India is moving freely to the ports at the existing level of freights... As to the other classes of oilseeds...the Indian price in several cases is well above export parity, and...no application has been received from the trade for a reduction in the railway freight on oilseeds;...all the information we have been able to obtain from those engaged in the export trade points to the conclusion that a reduction in railway freight at the present juncture would be ineffective... The desirability of a reduction in freight has been more insistently pressed in the case of cotton than...of any other agricultural commodity, and the Government of India have given the question their most anxious consideration. The financial circumstances of the railways are such that so long as the cotton crop is moving freely at existing rates, they felt that a freight reduction could not be faced... The position will therefore be reviewed in about six months' time, and meanwhile developments will be closely watched. But...a permanent reduction in the area under cotton in India, while undoubtedly injurious to the ryot, would affect the railways prejudicially in two ways, first because the cotton traffic itself would diminish, and second because food crops would probably be grown in the areas taken out of cotton with a consequent reduction in the railway traffic in food grains transported to these areas. This is an aspect of the case which will constantly be borne in mind...

" What has been said...on the subject of rates and fares leads me to revert to a point which was only lightly touched on... Our railway services, like other branches of Government, may have to adjust themselves permanently to a lower level of prices... The three factors which will mainly affect the decision will, I think, be (*i*) the extreme importance to the national life of cheap trans-

port, and in particular low rates for agricultural produce, (*ii*) the desirability of satisfying the equitable claims of the great body of railway servants in India, and (*iii*) the scale of contribution which, under the altered conditions, the railways can fairly be asked to make in aid of the general tax-payer. It is clear that each of these considerations will have to be balanced against the other two... To attempt to deal with any one of them in isolation from the others could not lead to a satisfactory solution...

" It has been necessary...to deal at considerable length with the anxious problems of railway finance which emerge from the present trade depression, and the other aspects of railway administration...can only be referred to briefly. There are three directions in which the ability of the railways to carry out desirable reforms and improvements has been sadly curtailed by the slump in trade and the reduction in railway earnings. One of them is the capital programme... We are unable to commence any new construction whatever, and can only carry on the works already in progress to completion. Of these the most important are the Sagaing bridge in Burma and the Raipur-Vizianagram Railway intended to open up a new outlet to the sea at Vizagapatam to a large area of the Central Provinces. Of the open line works now in progress or about to be undertaken, the most important are the doubling of the East Indian Railway from Cawnpore to Agra and the reconstruction of the Narbadda bridge which we have been compelled to undertake by considerations of safety... The second direction in which desirable expenditure has had to be curtailed is the provision of greater amenities...for third class passengers. At a time when all expenditure has to be severely restricted, it is impossible for the railways to provide services on the same scale as they are in a position to supply when times are prosperous... Finally, falling revenues mean slower progress in all the schemes which we hoped to undertake for the benefit of the railway staff and particularly for the lowest paid employees. This is inevitable, however regrettable, but while I am on this point I cannot close without paying a tribute to the indefatigable energy which during the last two years Mr. Hayman, the Staff Member of the Railway Board, has devoted to every question connected with the welfare of the staff... I can only refer here specially to the schemes which have been prepared and brought into force on most of the railways in India for improving the pay

of the lowest paid employees, and the steps which have been taken to give effect to our obligations under the Geneva and Washington conventions regarding the hours of work of railway employees. Both these matters are now far advanced...

" There are...two matters to which particular attention has been given, about which I should like to say a little more. One is the representation of Muslims in the railway service. Special enquiries have been made in three of the principal railways, and the Government of India have come to the conclusion that adequate steps have not yet been taken to give effect to the policy of Government and that further measures are necessary and must be introduced at a very early date... The other point to which I wish to refer is the question of Indianization. I should like to bring to the notice of the House the fact that the percentage of officers of Indian domicile recruited for the State-managed railways during 1929-30 was 70·7 per cent. and when promotions from the Local Engineering and Traffic Service are taken into account, the percentage rises to over 75. I think this result is satisfactory. The position we have now reached is that except in the Transportation (Power) and Mechanical Engineering Departments, there is at present no difficulty in obtaining Indian recruits with the requisite qualifications. For these two branches special efforts have been made to obtain Indian recruits during the period before the scheme of apprenticeship instituted in 1926 comes to fruition. During the last two years applications from Indians have been invited both in India and in the United Kingdom to fill vacancies in these branches in the hope that Indian candidates might be forthcoming in the open market, who would be likely to develop into efficient officers. The qualifying standard was lowered and the age limit relaxed and in this way seven recruits were obtained last year, and we hope to obtain five this year. In some cases candidates who were not fully qualified were engaged on probation for one year in the belief that with further experience and training they would come up to the required standard..."

CHAPTER VII.

Health and Education.

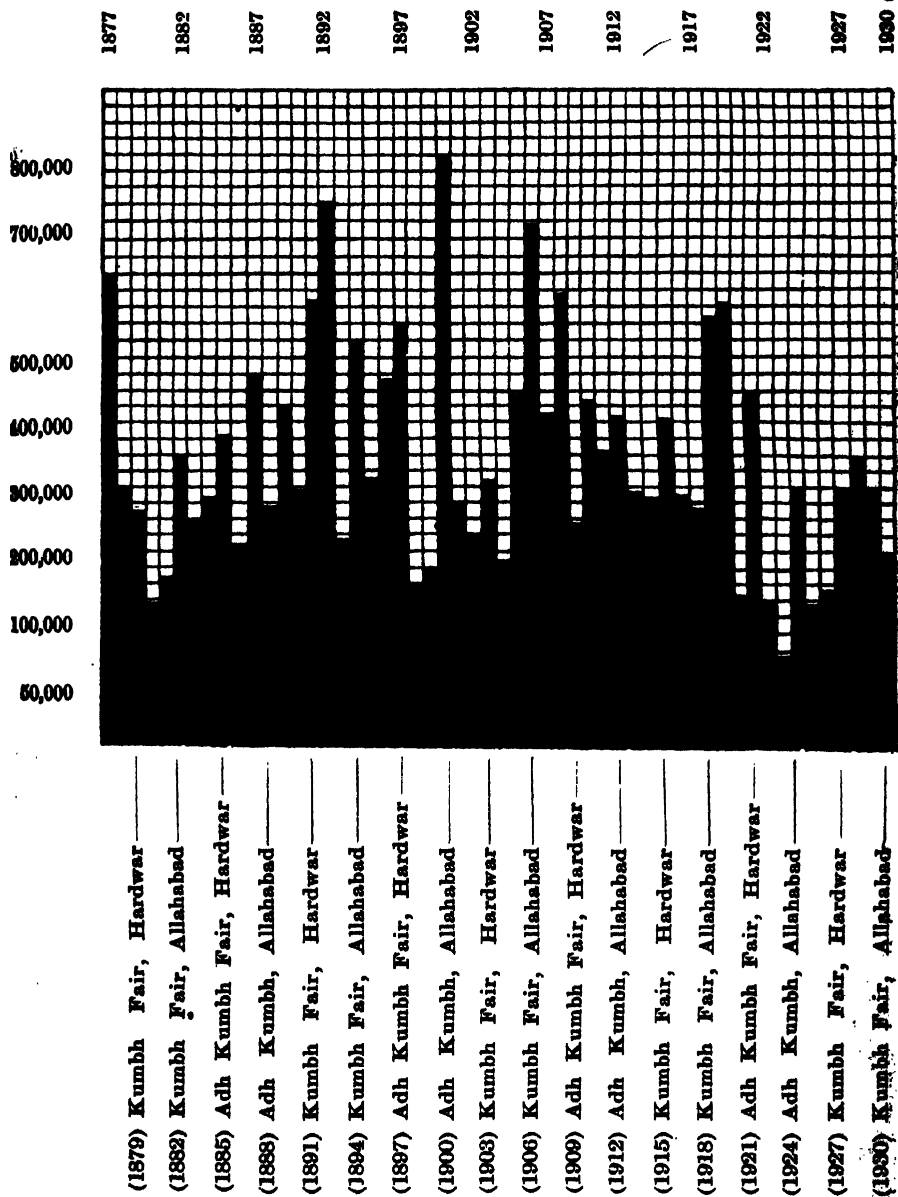
Public Health and Education are primarily the concern of the provincial Governments, and as such will be discussed in Chapter IX. The Central Government, however, still exercises certain residuary functions in connection with these subjects, which are sufficiently important to need separate description. As regards medicine, these consist generally in powers designed to deal with infectious diseases, by preventing their introduction from outside by land or sea, their spread from Province to Province within the country, or their dissemination to other parts of the world after they have established themselves here. For this purpose, authority was reserved to the Government of India, under the Act of 1919, to arrange for the establishment of quarantine in ports and to regulate the pilgrim traffic and emigration. In addition, the Government of India controls the Medical Statistical Bureau, which is responsible for compiling various authoritative reports on public health in India; and it also undertakes to represent the provincial Governments at certain international conferences and associated activities concerning medical matters. In education, the functions of the Government of India include responsibility for public instruction in areas such as the North-West Frontier Province which are administered directly, and for control over Chiefs' Colleges, the University of Delhi, and the denominational Universities of Benares and Aligarh. In this Chapter, therefore, we will be dealing solely with these particular subjects,—that is to say with such aspects of public health and education as from their nature are matters of "All-India" concern, or with those over which the Government of India has had to maintain or assume control owing to the financial, administrative, or territorial restrictions of the provincial Governments; and consideration of other features of the country's educational and public health services will be deferred until later[1].

[1] It must be understood that the statements made here on medical matters are provisional. Authoritative pronouncements on these subjects are contained only in the annual report of the Public Health Commissioner with the Government of India (the latest of which, at the time of writing, relates to the year 1928), and associated publications.

Obviously there are few activities of the State more important, particularly in tropical lands, than the maintenance and improvement of public health, and some indication has already been given, in Chapter III, of the magnitude and gravity of the problems with which the medical authorities are confronted in India. The physical and mental suffering that results from the prevalence throughout the country of so many serious diseases,—much of which, were it not for the apathy and unhygienic habits of the masses, would undoubtedly be preventible,—is of course appalling, and the economic consequences are perhaps equally so. These manifest themselves not only in such obvious ways as low productivity, rapid labour turnover, and loss of working days, but also,—owing to the inter-action between the high rate of mortality and the legal and religious customs of the country,—in uneconomic sub-division of land and in lavish expenditure on funeral ceremonies on the part of those quite unfitted to bear it.

Of the various epidemic diseases that devastate India, cholera, plague, small-pox and kala-azar are among the worst. Perhaps the most striking fact about the incidence of cholera is illustrated by the diagram opposite. Every twelve years, large religious fairs or *Melas*, known as *Kumbh Melas*, are held at the great pilgrim centres,—Allahabad and Hardwar,—and the *Adh Kumbh*, or smaller *Melas*, take place six years after each large *Mela;* and figures collected over a large number of years unquestionably demonstrate a connection between these unusual congregations of people and the incidence of cholera in India generally. During the period covered by our previous Report,—that is, in January 1930,—a *Kumbh Mela* was held at Allahabad; and elaborate precautions, which we described in some detail, were taken in order to prevent, if possible, an outbreak of cholera occurring throughout India such as it had done after similar celebrations in the past. Nevertheless, by the end of the period then under review, indications that the year 1930, despite everything that had been done, would show a marked increase in the incidence of cholera were already becoming apparent, and the gloomy predictions which we expressed on the subject in last year's volume were, in the event, fulfilled. During the first quarter of 1930, the disease had been less prevalent than during the three previous years, the improvement being particularly marked in the Madras Presidency,—where 3,976 cases were recorded during the period as against 17,399 in

CHOLERA IN BRITISH INDIA
(1877—1930)



1929,—and in Burma and Assam, which had 515 and 927 cases, respectively, as against 2,489 and 1,602. Such outbreaks as there were, occurred mostly in the old endemic centres in Bengal. In Bihar and Orissa, during the first seven weeks of the year, only 500 cases were reported, as against 2,431 in the corresponding period of 1929. In the United Provinces, however, signs of an extension of the disease were evident during the first half of February, though the usual seasonal rise should not have occurred until March; and there was also a slight increase in the number of cases in the Central Provinces. During the week ending on the 5th of April cholera cases in British India suddenly jumped from 2,794 to 4,018 as a result of the outbreak of the disease in epidemic form in Bihar and Orissa, where there were no less than 1,373 attacks from the disease during seven days. The Districts chiefly affected were those situated along the banks of the Ganges in North Bihar, such as Darbhanga, Muzaffarpur, Monghyr, Bhagalpur, and Champaran; Puri, on the other hand, which is a frequent centre of cholera epidemics, was practically free, and the figures for the Southern part of the Province were not far from normal. Towards the end of April, however, the incidence throughout the Province as a whole had reached a higher figure than had ever been recorded since 1921, and the outlook for the year was considered distinctly unfavourable. Gorakhpur in the United Provinces, bordering on the infected Districts of Champaran and Saran in Bihar, was by this time highly infected; and the outbreak was not confined to the Ganges valley, since the Districts of Bahraich, Gonda, and Basti, North of the Gogra river in the United Provinces, were also suffering severely. Nevertheless, alarming though this development was, comfort could be derived from the fact that as yet the infection had not extended to other parts of India, for throughout the whole of this period the incidence of the disease in the North-Western and Western parts of the country, in the Bombay and Madras Presidencies, and in Burma, remained at the worst no higher than was normal at this time of the year; and by the month of June, the unusually severe outbreak in the Ganges valley and other parts of Northern India had begun to abate. In July, however, a sharp outbreak occurred in the North-West Frontier Province; and early in August a sudden rise in the cholera curve occurred in the Central Provinces and Berar, the Districts of Bilaspur, Yeotmal, and Amraoti being particularly

severely affected. In the same month, a severe and widespread epidemic wave broke out throughout most of the extensive area contained within the Bombay Presidency, the East Khandesh, Nasik, Ahmednagar and Sholapur Districts, and the Satara region in the South, showing a very high incidence. The peak was reached during the week ending on the 27th of September; but the usual seasonal fall in the epidemic curve, both in the Bombay Presidency and the Central Provinces, was delayed till November, owing to the occurrence of a number of minor outbreaks, and the final recrudescence of cholera in the Presidency towards the end of November though brief was sharp. By the end of the year the outbreak of the disease throughout India may be said on the whole to have been subsiding, and normal conditions were practically regained during the first few months of 1931. Throughout the whole period the usual precautionary measures, such as inoculation, disinfection, segregation of contacts, and so forth, were undertaken on an extensive scale, as in previous years; but the fact that, despite all this work, a marked rise in the incidence of cholera in British India did in fact occur in 1930 was, it must be admitted, depressing.

Unfortunately, moreover, if we transfer our attention from individual years and consider larger periods of time, the conclusions to be drawn concerning the results hitherto achieved from the endeavours to reduce the prevalance of the disease are far from encouraging. Throughout the half century portrayed in the diagram opposite page 414, for example,* there has been scarcely any appreciable decrease in the total mortality from the disease. It may of course be argued that since the population of the country is much larger now than it was in 1871, the number of deaths should, if the incidence of cholera has not decreased, be larger than it is; but against this have to be set the facts not only that sanitation is somewhat better, and that preventive measures such as inoculation have been widely applied, but also that within comparatively recent times remarkable improvements have been made in the methods of treating the disease. In consequence, such decline as there has been in the actual average number of deaths,—which is very slight,—or even in the mortality recorded in relation to the total number of inhabitants, does not imply that there has been

* The column for 1930 in the diagram is based on preliminary figures only, which it may be assumed fall substantially short of the real total.

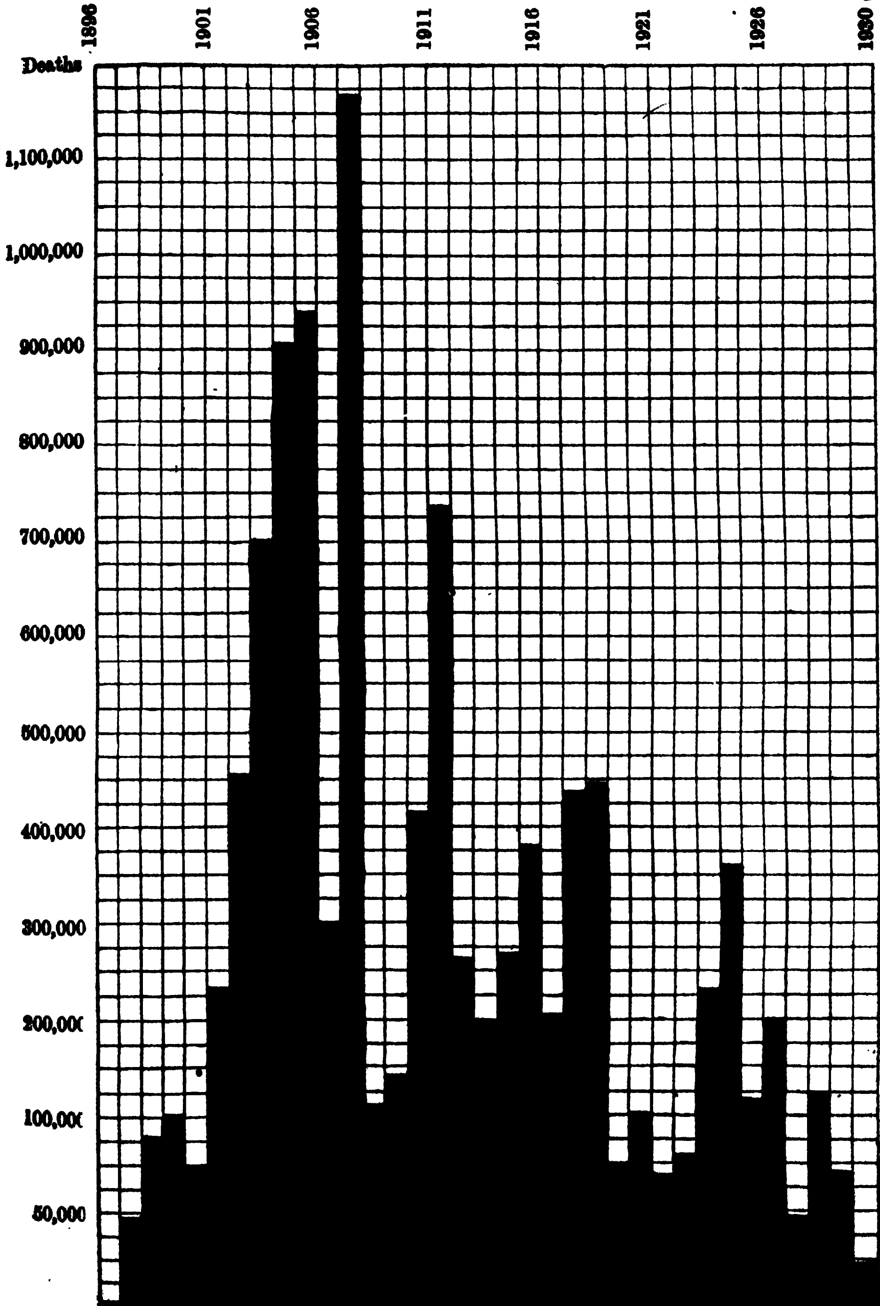
any decrease in the total number of attacks. As a result of the improved methods of treatment, which consist *inter alia* in the injection of quantities of saline fluids into the body, and the administration of permanganate pills and of drinks of kaolin and water, during the acute stages of the attack, it has proved possible to reduce the mortality from the disease in the well-equipped hospitals of the big cities really substantially,—the deaths in the Calcutta cholera ward, for example, having been brought down gradually over a number of years from 60 to 20 per cent. of the total number of cases admitted. As regards methods of prevention,—as contrasted with treatment,—by far the most effective is of course inoculation; but unfortunately the immunity conferred by injections of anti-cholera vaccine does not as a rule extend beyond six months. When serious epidemics of cholera are threatened, mass-inoculation is always advised, but since it cannot be made compulsory it is seldom practicable on a scale sufficiently large to yield really satisfactory results. The gradual spread of education, however, and of knowledge of the basic principles of public health, should in time lead to some improvement, particularly in the towns. But throughout the rural districts, of course, both preventive measures and treatment are much more difficult to undertake, owing to the dearth of medical facilities and the fact that cholera is primarily a water-borne disease dependent for its control upon the provision of proper sanitary arrangements such as the villages of India conspicuously lack.

The existence of a direct relation between the incidence of cholera in any one district and the standard of sanitation prevailing there was conclusively demonstrated during the course of the world-wide cholera epidemic of 1892-95, when in large towns such as London and Berlin, to which cholera was frequently introduced but which have an excellent water-supply, the disease caused little damage and never succeeded in obtaining a permanent footing. How sanitary facilities which could be considered at all adequate from the point of view of preventing cholera can be introduced into rural India is a problem which has hitherto entirely defied solution; and unfortunately the responsibility of India to the rest of the world in this matter is peculiarly great. The disease is indeed endemic in other parts of Southern Asia,—particularly in Malaya, Annam, and parts of China,—but for centuries this country has been its real home, and on numerous occasions it has spread thence

Westwards in epidemic form to Europe,—and even to America,—with terrible results. The disease is probably endemic in several parts of India, but its real focus and centre of diffusion is in Lower Bengal; were it possible to eradicate it completely there, means might be devised for freeing humanity altogether from one of the most dreadful scourges to which it is subject.

Plague entered India through Bombay in 1896, and rapidly secured a foothold throughout the whole Presidency; by 1902 it had spread to the Punjab, and a little later the United Provinces were involved. The incidence of the disease was at its worst in 1907, when no less than 1,160,000 inhabitants of this country died as a result of it. But since that year, there has been an almost continuous decline in the death-rate, and some sanitarians believe that the disease, as an endemic infection, will soon cease to occur in India altogether. The reasons for this progressive reduction in the number of attacks are obscure, but appear to be connected with an immunity in some way acquired against the disease in this country by rats; the extent of the improvement which has taken place in the mortality-rate can however be clearly seen in the diagram opposite. During the calendar year 1929 the total number of deaths from plague recorded throughout India amounted to no more than about 70,000, and the figures for the first quarter of 1930 were so satisfactory as to give us reason for suggesting, in our previous Report, that the depredations of the disease during 1930-31 would be less than they had been for many years past. These anticipations were fulfilled. The customary seasonal rise in the mortality-rate took place during the months of March and April, and the incidence of plague was for a time rather severe in the Eastern Districts of the United Provinces and in the Belgaum and Dharwar Districts of the Bombay Presidency; but despite this, the total number of deaths reported during the year was only slightly over 20,000, which is the lowest figure reached since 1898,—the year immediately following that in which plague was introduced into India. The improvement was most pronounced in the Punjab and the Western portion of the United Provinces.

The incidence of small-pox throughout India during the last four years has been comparatively mild. The improvement recorded in 1929 was continued in 1930, when the mortality figures amounted to less than 50,000, as against 72,884 in the previous year. In the first quarter of 1930,—as we indicated in our last Report,—


PLAGUE IN BRITISH INDIA
(1896—1930)
1896
1901
1906
1911
1916
1921
1926
1930 (Preliminary)
Deaths
1,100,000
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
50,000

an unusually severe outbreak occurred in the Bombay Presidency, and during the months of February, March, and April over 70,000 cases and nearly 15,000 deaths were recorded; the East Kandesh District was particularly severely affected. The worst month was April, when over 44,000 cases occurred throughout British India as a whole. From that time onwards, however, the situation was much more satisfactory, though cases continued to be reported from most parts of the country. But the figures for the year as a whole were distinctly better than they have been for some time. Mention was made in our last issue of the fact that, during the outbreak in the first quarter of the 1930, several cases of the disease occurred on ships that had sailed from or touched at Indian ports, and that in consequence many foreign countries imposed severe restrictions on Indian shipping under the International Sanitary Convention. It was however soon clear that these restrictions, besides causing considerable disturbance in the ordinary course of trade, were in many cases difficult to work, and during the course of the year under review the Government of India represented to the *Office International d'Hygiene Publique* in Paris that endeavours should be made to draft rules which would be more uniform and practicable and acceptable to all countries, for preventing the spread of small-pox by sea.

Kala-azar is a disease which although not peculiar to India has severely affected certain of the Eastern parts of the country, and especially Assam. Symptomatically it consists simply of prolonged, and on occasions acute fever,—which may in the early stages be mistaken for that of typhoid or malaria,—and causes such extreme wasting and exhaustion as to be frequently fatal. Probably it has been endemic at least in Bengal and Assam for centuries, where the condition which for long had been known as malarial cachexia is now recognized to have been no more than kala-azar in a non-epidemic form; to a lesser extent the disease has also for some time been endemic in Bihar and Orissa, the Madras Presidency, and the Eastern part of the United Provinces. But about 1882 virulent epidemic kala-azar entered Assam through the Garo Hills and thence spread up the valley of the Brahmaputra, reaching the Nowgong District about ten years later. Its advance though slow was deadly, whole villages being devastated and reverting to jungle; less than 10 per cent. of those affected survived, and the very name kala-azar was mentioned with terror by the inhabitants.

The nature of the disease was investigated by Indian research workers, and the success of the new method of treating it is one of the greatest therapeutic triumphs of recent times, since an infection with a case mortality of 90 per cent. has been converted into one with a recovery rate of 90 per cent. The treatment is by the intravenous injection of antimony or organic compounds thereof. Hundreds of men have been carefully trained in the technique of inoculating these potent drugs wholesale into the affected population of the villages, and the inhabitants, realizing their miraculous effects, have flocked for treatment in thousands, so that by 1930-31 the disease could fairly be regarded as being under control. During the year under review the Kala-azar Commission, which had been working in Assam with little interruption for many years, shifted its headquarters to Calcutta, and will henceforward be known as the "Kala-azar Enquiry". The parasitic organism which causes the disease,—a minute protozoan known as *Leishmania donovani*,—was discovered as long ago as 1903, but until recently its method of transmission remained quite unknown. Numerous species of insect have from time to time been thought to be the carrier, but suspicion has recently been fastened upon a small sandfly, *Phlebotomus argentipes*, whose habits and anatomy have been subjected to exhaustive investigation by workers in the Calcutta School of Tropical Medicine. During the year under review successful experiments were at last achieved in transmitting *Leishmania donovani* to certain mammals,—Chinese hamsters to be precise,—by means of artificially infected sandflies of this species; hitherto, however, all attempts to infect the human body with the disease in this way have failed,—and consequently, although the grounds for suspicion are strong, direct evidence that *Phlebotomus argentipes* is the culprit is still lacking. Apart from the researches undertaken into the means whereby the disease is transmitted, further improvements of considerable value were effected during the year in the technique of treatment.

Among the other infectious or contagious diseases which are prevalent in this country, and which take a heavy toll of life and health, are typhoid fever and dysentery. Both, like cholera, affect the intestinal tract, and are classed among those water-borne diseases whose incidence can only be effectively checked by improved sanitation. Typhoid,—or enteric fever as it is sometimes called,—is more or less endemic in most parts of the world, but tends to be

less widespread and severe in the temperate than in the tropical regions. In this country, owing not only to the climate but to the absence or deficiency of sanitary arrangements in the rural districts, it is a disease of frequent occurrence, and often assumes very virulent form,—particularly amongst Europeans; and the fact that its incidence among adult Indians is comparatively slight, is explained by the supposition that throughout many parts of the country the majority of children have suffered from it before reaching the age of twelve years, and thus obtained a large degree of immunity. Unfortunately it has hitherto proved impossible, for administrative reasons, to keep accurate statistical records of the occurrence of typhoid in India except in certain limited areas, and deaths from the disease are usually enumerated under the general heading of unspecified " fevers ". A substantial measure of protection can be obtained by means of anti-typhoid injections, which were first undertaken by Sir Almroth Wright in 1896; and the efficacy of his method,—as improved by subsequent workers,—was amply demonstrated during the Great War, when the troops in most armies were subjected to it, and the number of typhoid cases that occurred amongst inoculated men was remarkably small. The protection acquired from inoculation usually lasts for about two years. Dysentery is also a disease of very wide occurrence in India, but on the whole it may be said to be milder in form than might be expected. In times of famine, however, and amongst pilgrims and the inmates of jails, it occasionally becomes very severe and causes many deaths. Both amœbic and bacillary dysentery are prevalent,—the latter distinctly more so than was at one time believed to be the case,—and the helminthic and spirochaetic forms of the disease also occur occasionally. Owing to the difficulties of ensuring adequate investigation or diagnosis in the remoter parts of the country, deaths from the various kinds of dysentery are usually recorded together with those from diarrhœa. The mortality from these combined causes in India is high.

Another grave disease whose incidence throughout the country is considerable is leprosy. An Indian Council of the British Empire Leprosy Relief Association was inaugurated in January, 1925, by Lord Reading, and the appeal for money which was issued resulted in the creation of an endowment fund of Rs. 20,23,500. The yield from this fund, which amounts to Rs. 1,22,372 annually, is used, together with certain additional sums which become available (they

totalled about Rs. 8,000 during 1930-31), in carrying out an anti-leprosy campaign in which the respective parts to be played by the Central and provincial Committees are clearly defined. The Central Committee's charge includes research, the provision of short courses of training for medical men in the diagnosis and treatment of leprosy, propaganda, and survey. Though no absolute specific for treating leprosy has yet been found, it has been established that much improvement may be obtained from certain kinds of treatment. Perhaps the most important points which have been made clear are that leprosy can be easily diagnosed in its early stages; that those in whom it is so discovered, and who undergo proper treatment, have every hope of being free from infection, and can look forward to continued absence of all signs of the disease; but that treatment at present is very closely dependent upon raising and maintaining the general resistance of the body, and if some other debilitating disease is acquired, or if careful attention is not paid to exercise, diet, climatic environment, or personal hygiene, it is liable to fail. Further research is being undertaken into the method of transmission, the pathology of the disease, the effect of diet on its course, and improved methods of treatment. The Council each year publishes in its annual reports a brief account of the work done on these subjects in the School of Tropical Medicine and Hygiene, Calcutta, under Dr. E. Muir, M.D., F.R.C.S. Dr. Muir is provided by the Council with a staff which includes an expert research worker, Dr. J. M. Henderson, M.B., Ch.B., but his own services are paid for by the Indian Research Fund Association, which also contributes liberally towards leprosy research. The Annual Report of the Council for 1930 informs us that since the date of its inception it has spent no less than Rs. 55,000 in publishing pamphlets, posters, slides, and films, most of which have been distributed free of cost. During 1930 the total expenditure of the Council was Rs. 1,31,000, which included Rs. 57,520 distributed to the provincial branches by way of grants. A further batch of 104 doctors, recruited from the various Provinces and States, was trained in the Calcutta School of Tropical Medicine and Hygiene, at a cost of Rs. 14,244, in the diagnosis and special treatment of leprosy. Sums of Rs. 24,457 and Rs. 19,997 respectively were spent in promoting research and conducting leprosy survey operations. The method of survey is playing an important part in enabling the problems created by the disease to be studied

in their true perspective, and has already stimulated much interest both among medical authorities and the general public. The principle of this method is to start a treatment centre in what is known to be a highly endemic area, follow up infectious cases to their villages, and examine contacts for early signs of the disease. The villagers are shown by practical demonstration, posters and lantern slides, what the early signs are, how infection is transmitted, and what good results can be obtained from treatment. In this way the confidence of the people is won, and sufferers, instead of trying to hide their affliction, come forward in the hope of being cured. It is possible to carry out a very thorough investigation by this means. The survey has brought to light many useful facts,—for instance, that leprosy is most prevalent among semi-aboriginal tribes who have left their seclusion but have not yet adopted civilized sanitary practices; that the disease is frequently transmitted to persons of better class when these semi-aboriginals are employed by them as servants; that a single highly infectious case may often infect a whole group of villages; and that often there is a definite predisposing cause for infection, such as improper diet, or chronic under-feeding, or the presence of some other disease,—such as syphilis, malaria, hookworm, or filariasis. During the year under review selected areas in the United Provinces, the Punjab, and Delhi were surveyed, and valuable data collected,—222,307 persons in 652 villages having been examined. No less than 304 of these villages were found to contain cases of leprosy,—the total number discovered being over 650, despite the fact that only 109 lepers were reported in the census. 276 lepers attended the treatment centres opened by the survey party. A further year's study of the problems created by the disease has emphasised the handicaps under which the Association is working. Not only is there still great ignorance regarding the prevalence of the disease, but a serious dearth of proper facilities for treating it. The ostracism and the economic disabilities to which lepers are subject, extend the problem beyond the realm of medicine proper into that of social science. The tendency on the part of sufferers to hide their malady, and their ignorance of having contracted it, are not confined to the poor and illiterate classes; and cases are continually being discovered in the most unexpected places and subjects. Since the early stages of the disease are the most infectious, as well as the most amenable to treatment, it is obvious

that one of the Association's most pressing duties is to dispel the ancient superstitions and prejudices which have become associated with it, and hand on to the public the knowledge of its causation, prevention, and treatment which scientific research has recently given us.

But more serious than any of the diseases we have yet dealt with in its effects upon the general well-being of the inhabitants of this country is malaria, since there is scarcely a part of India that is altogether free from it. In the mortality statistics, cholera, plague, and small-pox are classified separately, and the average annual death-rate from each of these causes has ranged in recent years from a minimum of 20,000 to an extreme maximum of 500,000. Other unspecified "fevers," however, account on the average for between 3,500,000 and 4,000,000 deaths per annum, and allowing for inaccuracies of diagnosis it was until recently believed that as much as two-thirds of the deaths entered under this head should be ascribed to malaria; recent investigations made in special areas have indeed suggested that this proportion may have been considerably over-estimated, and that malaria may not account for more than one-fourth of the deaths reported as being due to "fevers", the remainder being mostly cases of dysentery, typhoid, pneumonia, phthisis, and so forth. But even if this revised estimate is correct, the annual number of deaths from malaria would still be substantially larger than that of the deaths resulting from any of the other causes we have enumerated. Moreover this is not the most important aspect of the matter, since the percentage mortality from malaria is very much less than that from cholera, plague, small-pox, or kala-azar, and the number of cases, exclusive of fatal ones, is thus enormously greater. As many as 10 million cases of malaria were treated in hospitals throughout the country during 1930, and the number of cases which do not come up for hospital treatment is of course immense. Apart altogether from the suffering entailed by this state of affairs, its consequences from the point of view of the country's general economic welfare are appalling; the actual number of working days lost as a result of it must alone amount to many millions annually, and in addition, of course, there is the widespread though incalculable loss of efficiency that ensues from the general weakening effects of the disease upon the human constitution. Epidemic malaria occurs sporadically over practically the whole sub-continent, and the disease is

actually endemic throughout large areas, both in the forest-clad country that fringes the mountain ranges, and in tracts of Bengal, Assam, and Burma, where the configuration of the land prevents the drainage of the flood-water after the monsoon; in such regions, besides raising the average level of the death-rate, the disease permanently lowers the vitality of the people and reacts both on the birth-rate and the general economic conditions. Some of the more important practical steps which are being taken by the provincial Governments to cope with this state of affairs will be briefly indicated in Chapter IX; as regards the Government of India, its chief activity necessarily consists, for reasons we have already mentioned, in the encouragement of research. As a result of the recommendations put forward at the Conferences of Medical Research workers in 1925 and 1926, the Central organization now known as the Malaria Survey of India was established in 1927, with headquarters at Kasauli, for the study of the disease in this country. The nucleus of the Survey was formed by the amalgamation of the Malaria Enquiry and the Malaria Classes,—which had been financed by the Indian Research Fund Association,—with the Central Malaria Bureau of the Central Research Institute; and it was arranged that the Survey should be maintained by means of an annual grant from the Indian Research Fund Association to cover the cost of a suitable staff, the provision of equipment, and current expenses, until such time as the Government of India should be able to assume direct control of it. The work of the Survey already covers a remarkably wide field, as will be realized from an examination of its annual report,* and its achievements during the year under review were again substantial.

We may now turn to consider the various and important activities undertaken by the Government of India in connection with the development of medical research in this country. The Indian Research Fund Association, which was established in 1911, can claim to have been one of the first institutions for conducting medical research on a large scale in the world, and its organization has been copied by several other nations. In recent years, as has been indicated in previous editions of this Report, the Government of India has been able to increase the scope of the Association's activities considerably, and during the period under review the

* "Annual Report of the Central Research Institute, Kasauli, including the Annual Report of the Malaria Survey of India."

numerous important investigations carried out under its auspices, and the scientific papers published by its workers, bear abundant testimony to the value of its operations from the point of view of the progress of medical science both in India and internationally, —as well as to the necessity for its maintenance and expansion.

As in the previous year, a grant of Rs. 7,50,000 was made to the Association by the Government of India during 1930-31, which consisted of Rs. 5,00,000 for research and Rs. 2,50,000 to enable it to meet the pay, pension, leave, and passage contributions of such officers of the Medical Research Department as it employs. During the year under review the Association financed 47 enquiries into various diseases at an estimated cost of Rs. 10,98,362. These included investigation of problems connected with many of the pathological conditions which had also been under examination during the previous year, such as malaria, plague, cholera, rabies, kala-azar, leprosy, helminthological and nutritional diseases, tuberculosis, maternal mortality and morbidity in child-birth, anæmia of pregnancy, sprue, skin diseases, diabetes, the blood changes which occur in certain tropical diseases, filariasis, guinea-worm disease, and osteomalacia; in addition, researches were undertaken into the uses of bacteriophage for cholera and dysentery, the causes and effects of drug-addiction, spirochaetosis-transmission, the secretion and composition of gastric juices, the histology of the spleen and bone-marrow, and the determination of age for medico-legal purposes by anthropological means; tests were also made of the value of indigenous drugs. The malarial inquiries were conducted chiefly by the Malaria Survey of India at Kasauli; plague was investigated at the Haffkine Institute at Bombay, kala-azar by the Commission in Assam,—before its transference to Calcutta,—bacteriophage by Dr. Asheshov at Patna, nutritional research by Col. McCarrison at the Pasteur Institute, Coonoor, and indigenous drugs and drug-addiction by Lt.-Colonel Chopra at Calcutta. During the year the Association continued, as usual, its contributions towards the cost of two professorships at the Calcutta School of Tropical Medicine and Hygiene, towards the pay of the leprosy worker employed at the same school, and towards the funds of the Imperial Institute of Entomology in London.

The Conference of Medical Research Workers held its eighth meeting in Calcutta in November 1930. As has been explained

in previous issues of this Report, the members of the Conference, who are drawn from all parts of the country, meet to discuss the general policy of research work in India as well as any new investigations which it is proposed should be undertaken by the Indian Research Fund Association; and the opinions expressed at the Conference are taken into consideration by the members of the Scientific Advisory Board of the Association when that Board is reviewing the programme of work for the following year. The meeting of Advisory Board was held this year,—as in 1929-30,—immediately after the conclusion of the Conference, and the programme of research for 1931-32 was examined and proposals were put forward for acceptance by the Governing Body of the Association. When the Governing Body met in March 1930 it accepted in principle an important resolution which had just been passed by the Conference on the subject of cholera, which recommended that the whole question of the epidemiology of the disease should form the subject of an enquiry under the direction of a first-class expert. As far back as September 1929 a bacteriologist had been advertised for in connection with this project, and by March 1930 the applications which had been received were under consideration. At its recent meeting in March 1931 the Governing Body reached a further stage by agreeing to the formation of a Cholera Commission in accordance with the proposals outlined by the Scientific Advisory Board at the meeting it held in Calcutta in November 1930.

Mention was made in our previous issue of the project for establishing a Central Medical Research Institute at Dehra Dun. During 1929-30 it seemed probable that work upon the scheme,—which had been provisionally sanctioned by the Secretary of State, the Standing Finance Committee and the Government of India,—would be begun during the period now under review, though as we indicated at the time, some uncertainty had begun to arise, by the end of the year covered by our last Report, whether the arrangements provisionally agreed upon were really the most suitable. On the 8th of February 1930 Mr. M. R. Jayakar had moved a resolution on the subject in the Legislative Assembly, and the Government subsequently decided that it would be desirable to convene a conference consisting of officials and non-officials to consider the whole question afresh. This conference was duly held in Simla in July 1930, under the Chairmanship of Sir Frank Noyce, Kt., C.S.I., C.B.E., Secretary to the Government of India

in the Department of Education, Health and Lands, and was attended by the Director-General of the Indian Medical Service, the Public Health Commissioner with the Government of India, the Director of the Central Research Institute at Kasauli, and representatives of the Legislative Assembly, the medical faculties of Indian Universities, and the Indian Medical Association. As a result of the discussions which took place, the non-official members of the Conference by a majority of votes decided to recommend that a Central Medical Research Institute on the lines advocated by the Fletcher Committee should be located not at Dehra Dun, but at some University centre, and that the work should be begun as soon as financial conditions permitted. This recommendation was carefully considered by the Government of India, but since the close of the calendar year the decision has been reached that so long as the present financial stringency continues, the establishment of any Institute of this kind will have to be postponed. This is a regrettable development to have occurred in connection with so important a project,—and one which had been under consideration for some time,—but circumstances being what they are, it is inevitable. On the other hand, the construction of the All-India Institute of Hygiene and Public Health at Calcutta, which was projected at about the same time, and for which the Governing Body of the Indian Research Fund Association agreed to accept the responsibilities of management, progressed very satisfactorily during the year. As we mentioned in our previous Report, Lieutenant-Colonel A. D. Stewart, I.M.S., and Major A. A. E. Baptist, I.M.D. (retired), were selected as Director-designate of the Institute, and Assistant to the Director-designate, respectively, for a period of two years, and have been closely associated with the work of construction, organization and equipment throughout 1930-31. Building operations are still in progress, but according to the contract the work should be completed by the end of December 1931; and it is hoped that it will be possible to hold the formal opening ceremony in January 1932. Arrangements are being made to include a suitable provision in the budget estimates of the Central Government for 1931-32 to meet the recurring expenses of the Institute which the Government of India undertook to meet. A co-ordination committee has now been set up and has met to consider the internal organization of the Institute; and the Rockefeller Foundation in New York, which contri-

buted a substantial sum of money towards the project, has been kept closely informed throughout the year of the way the work was progressing.

Reference was made in last year's Report to the fact that the Rajah of Parlakimedi had given Rs. 1 lakh for the purpose of establishing two scholarships for training in nutritional work under the Director of Nutritional Research at Coonoor. The money, constituted as the "Parlakimedi Trust", is being administered by the Indian Research Fund Association with the help of a committee. During the year under review, the trust deed was signed by all the members of the Governing Body of the Association including the Rajah Sahib. The committee has invited applications for the award of scholarships under the trust, from Indian graduates of the Madras, the Andhra, or other Indian Universities who have the requisite qualifications, through advertisement in the public press.

Reference has also been made in recent issues of these Reports to the reorganization of the medical services in India effected in 1928. The main features of the reorganization scheme were that the suggested unification of the military medical services in India should be abandoned; that an Indian Medical Service constituted approximately on the same lines as at present should be retained, primarily in order to meet the needs of the Indian Army; that to maintain the necessary war reserve of military medical officers, and to provide European medical attendance for European officers of the superior Civil Services, and their families, provincial Governments should be required to employ a certain number of officers of the Indian Medical Service; but that a number of posts previously reserved for these officers should be gradually handed over to the provincial Medical Services. During the year under review the future of the Indian Medical Service again came under consideration in connection with the proposed constitutional changes. The views expressed upon the subject in the report of the Statutory Commission and in that of the Services Sub-Committee of the Round Table Conference are to some extent at variance. On the one hand the former contains the following observations: "European officers of the services lay great stress on the continued provision for themselves and their families of medical treatment by European doctors. We regard this as essential; no change should be made in the pre-

sent Devolution Rule 12 which gives the Secretary of State in Council power to prescribe the number of Indian Medical Service officers to be employed in the provinces, and the appointments and conditions upon which they shall be employed; and no effort should be spared to secure an adequate number of European recruits for the Indian Medical Service to implement this fundamental obligation ".* On the other hand the Services Sub-Committee of the Round Table Conference recommended as follows: " 1. Inasmuch as the Government of India Act and the rules made thereunder by the Secretary of State in Council guarantee certain rights and safeguards to members of the Services, due provision should be made in the new constitution for the maintenance of those rights and safeguards for all persons who have been appointed before the new constitution comes into force. When the new constitution is drawn up, suitable safeguards for the payment of pensions (including family pensions) and provident funds should be provided. As it is important that those responsible for the working of the new constitution should not at its initiation be embarrassed by the economic waste and administrative difficulties which a change of staff on a large scale would entail, it is desirable to take such steps as are necessary to reassure existing members of the Services with the view that they may serve with loyalty and efficiency for their normal term. To this end the Sub-Committee agreed that the right to retire on proportionate pension should be extended, but opinion was divided as to whether the extension should be for an unlimited term or for a definite period of years, not exceeding five years . . . 4. Subject to paragraph 1, the Sub-Committee are of opinion that in future there should be no civil branch on the Indian Medical Service; and that no civil appointments either under the Government of India or the Provincial Governments should in future be listed as being reserved for Europeans as such. The civil medical services should be recruited through the Public Service Commission. In order to provide a war reserve, a clause should be inserted in the contracts of service of a sufficient number of officers that they shall undergo such military training and render such military service as they may be called upon to do. The extra cost involved should be borne as an Army charge. Further, the Government and Public Service Commission in India should bear in mind the requirements of the Army and the British

* Report of the Indian Statutory Commission, paragraph 333, page 292.

officials in India and take steps to recruit a fair and adequate number of European doctors to their respective civil medical services, and should be prepared to pay such salaries as would bring about this result. It is suggested that agreement might be reached between the Central Government and the Provincial Governments whereby the latter in selecting their European doctors might grant a preference to those members of the Indian Medical Service who have performed a period of service with the Army. We contemplate that such members would sever their connexion with the Indian Medical Service during the term of their employment in the Provincial Medical Service—subject only to the acknowledgment of a claim by the Army authorities in time of emergency. The practical details of any such arrangement would have to be a matter of agreement between the Army authorities and each provincial Government ".*

During the year under review there was a considerable demand from the Provinces for the Services of officers of the Indian Medical Service, both European and Indian. The demands for officers of Indian domicile were complied with in full, as the Director of Medical Services has been able to spare them; so far as European officers are concerned, however, it was not possible to transfer the numbers asked for, owing to the necessity for maintaining a sufficient strength of European officers on the military side.

It will be recollected that reference was made in last year's volume to the scheme of reservation of posts for the Indian Medical Service in 1928, and to the action taken to safeguard the rights of I.M.S. officers in civil employ. The Secretary of State's orders on the subject have now been received and regulations giving effect to them are being submitted to him for approval.

In our previous Report we described at some length the origin of the controversy which had arisen towards the end of the period then under review, as a result of the decision of the General Medical Council of Great Britain to withdraw its recognition of Indian University medical degrees; and as the matter has not, at the time of writing, been settled, and is of considerable importance owing to the strong feelings it has aroused, we need make no apology for

* Indian Round Table Conference: Proceedings of Sub-Committees, Volume VIII, pages 249-252. It should be mentioned that paragraph 4 was written subject to qualifying notes by Major Stanley, Lord Zetland, and Sir Edgar Wood.

reproducing most of what we said last year, in explaining the cause of the trouble, before proceeding to describe the developments which took place in connection with it during the year 1930-31. It was in 1892 that Indian Medical degrees were originally recognized by the General Medical Council for purposes of registration in Great Britain. Since 1922, however, the recognition has been accorded only for limited periods at a time, and has been extended from year to year as a result of the reports of *ad hoc* inspectors appointed on behalf of the General Medical Council to investigate the medical examination and report on their standards. Sir Norman Walker, who had inspected the medical examinations in India in 1922, undertook, as a visitor on behalf of the General Medical Council, a further enquiry into the course of medical study and examinations of the Indian Universities early in 1927, at the invitation of the Secretary of State for India. In his report he pointed out that some more satisfactory basis than periodic visitation and inspection through the direct agency of the Council should be found, and stated that he looked forward ultimately to the establishment in India of " some central authority comparable to the General Medical Council ",—pending whose creation he suggested that a post for a Commissioner of Medical Qualifications and Standards should be created. The Government of India thereupon consulted the provincial Governments concerning both these proposals. As regards legislation for the creation of an All-India Medical Council, a draft Bill was forwarded in May 1928 to the provincial Governments, which were asked to criticise its provisions freely, and to give similar opportunity to representative bodies and individuals interested in the measure and competent to express an opinion. The replies received by the Government of India, however, indicated that considerable divergence of views existed, and it was therefore decided that the best method of reaching agreement would be to convene a conference at which the draft Bill could be discussed in all its bearings. A conference was accordingly held at Simla in July, 1929, and was attended by representatives of most of the provincial Governments. The principle of the proposal to establish by statute an All-India Medical Council was first discussed, but it was evident that it did not find favour with the majority of the Ministers of the Provinces who were present. The Government of India therefore decided to re-examine the whole question in the light of the views that had been expressed. In the

meantime, with the concurrence of the provincial Governments, it was agreed that a whole-time Commissioner of Medical Qualifications and Standards should be appointed for a period of one year in the first instance. This proposal, however, had to be abandoned owing to the strong opposition which it aroused both in the Legislative Assembly and elsewhere, and the Government of India then had to consider what alternative arrangements could be made with a view to securing the continued recognition of Indian Medical degrees by the General Medical Council. The Universities' Conference which met in Delhi had recommended that, pending the creation of an All-India Medical Council, a Board consisting of representatives of the Government of India, and of Medical Faculties of Universities, should be appointed immediately as a temporary means for determining and supervising medical qualifications and standards at Indian Universities. This suggestion appeared to the Government of India to be sound, and the General Medical Council was informed that the Government would be prepared to set up a Board consisting of one representative from each Medical Faculty of the Universities in India, under the Presidentship of the Director-General of the Indian Medical Service, which would be required to appoint three Inspectors highly qualified in medicine, surgery and midwifery respectively. The report of these Inspectors would be submitted to the Board, which would then decide whether a guarantee should be given to the General Medical Council that the possession of medical degrees of a particular Indian University ensured the possession of the minimum qualifications accepted for registration in Great Britain. On the 24th of February, 1930, however, when the proposals of the Government of India came up for consideration by the Executive Committee of the General Medical Council of Great Britain, resolutions were passed in favour of the Council withdrawing its conditional recognition of Indian University medical degrees, on the ground that the Committee was not in possession of authoritative information such as would justify them in recognizing them. This decision caused intense and widespread resentment throughout India,—besides inflicting certain practical disabilities and hardships on the holders of Indian medical degrees. The Government of India, with the concurrence of provincial Governments, accordingly decided to convene a second conference, consisting of representatives of most of the provincial Governments and of all the Indian

Universities, to consider the whole question of establishing an All-India Medical Council afresh. The Conference met at Simla in June 1930, and after full consideration resolved that the establishment of an All-India Medical Council is essential and acceptable in principle, and that a Bill should be drafted and legislation undertaken to bring the Council into existence as soon as possible. The drafting of a Bill in accordance with this recommendation had been nearly completed by the end of the period under review, and it is proposed to refer it for criticism and remarks to local Governments and other bodies likely to be interested as soon as possible,—the final shape and scope of the Bill being left for settlement until these criticisms have been received.

In last year's Report it was stated that provision had been included in the Budget estimates for 1930-31 for the appointment of a small *ad hoc* committee, which should enquire into the extent to which drugs recognized by the British Pharmacopoeia, but of impure quality or defective strength, are imported, manufactured and sold in India, and to indicate what measures of control might, in the public interest, be desirable. The Committee,—which consisted of Lieutenant-Colonel R. N. Chopra, M.A., M.D., L.R.C.P., M.R.C.S., I.M.S., the Rev. Father J. F. Caius, S. J., Pharmacologist at the Haffkine Institute, Bombay, Mr. H. Cooper, Ph.C., F.C.S., and Maulvi Abdul Matin Chaudhury, M.L.A., assembled in Calcutta in October, 1930, issued a *questionnaire* to selected persons and bodies, and then visited important centres in the Provinces and recorded evidence. It finished its work towards the end of March, 1931, and at the time of writing its report is being printed.

Apart from its functions in fostering research and supervising the activities of the All-India medical services, the Government of India is also responsible for the provision of medical and public health facilities in the areas which it administers directly. Unfortunately the financial stringency which prevailed throughout the year under review prevented any substantial improvements taking place in this direction, and indeed caused considerable dislocation to schemes which had already been undertaken. The necessity for economy,—together with certain difficulties which arose in connection with the site that had been selected for it,—rendered it impossible for any material progress to be made with the scheme which we mentioned in last year's Report for establishing a new

central hospital in Delhi; and the projected reorganization of the Medical and Public Health Department in the North-West Frontier Province had to be severely curtailed. This project arose from the promise given by the Chief Commissioner of the North-West Frontier Province in July 1930, after consultation with the Government of India, that it would be his object to secure to the Province, in respect of medical and public health facilities, the same standards of administration as obtain in the adjacent Districts of the Punjab. The Chief Medical Officer of the North-West Frontier Province accordingly prepared a scheme which was estimated to cost about Rs. 24 lakhs in initial expenditure and nearly Rs. 6 lakhs in recurring expenses. The Government of India considered the scheme carefully but found it necessary in view of the acute financial stringency to undertake no expenditure except that required for the three most urgent items in it; these were the opening of six rural dispensaries in outlying tracts for which Rs. 78,700 will be required,—including Rs. 4,910 recurring; the improvement of the female section of the Lady Reading Hospital at Peshawar, by the erection of maternity wards and equipment, which will cost Rs. 31,000; and the posting of 3 women sub-assistant surgeons at three *tahsil* headquarters hospitals, which will cost Rs. 16,700, including Rs. 1,400 recurring.

In Chapter I of our previous issue we described the activities of the committee known as the *Haj* Enquiry Committee, which had been appointed in 1928 to investigate the facilities provided for Indian pilgrims proceeding on *Haj* from Calcutta, Bombay, and Karachi to the Hedjaz. The Committee's report was published in March 1930, and action upon one of its more important recommendations,—namely that which proposed the establishment of a Standing Committee on Pilgrimage,—had already been taken prior to the period now under review. During the twelve months ending on the 31st of March 1931 the Standing Committee held meetings on three occasions, when several important matters connected with the pilgrim traffic came up for discussion. Decisions have also been reached during the year on several of the other important recommendations of the *Haj* Inquiry Committee. In May, 1930, the scheme for improving the pilgrim camp at Karachi which the Committee had recommended, and which it is estimated will cost Rs. 68,000, was duly sanctioned; and in February, 1931, the Government of India arranged, with the shipping companies concerned

in the pilgrim traffic, for the reduction of steamer fares which the Committee had advocated in favour of *Haj* pilgrims proceeding to the Hedjaz during the 1931 season. It was also decided that Calcutta should be retained permanently as a pilgrim port. Other recommendations of the Committee are being examined as rapidly as possible in the light of the opinions received from provincial Governments and the various private interests concerned. On the conclusion of the 1930 *Haj* Pilgrimage, the Government of India sanctioned the repatriation of some 400 destitute pilgrims stranded at Jeddah at a cost of about Rs. 13,500.

In the first paragraph of this Chapter mention was made of the activities of the Government of India in connection with international co-operation in medical matters. These have increased substantially since the war,—largely as a result of the establishment of the Health Organization of the League of Nations. This body already performs extremely valuable functions, which seem likely to increase, since pestilence cares nothing for national boundaries, and diseases which start from a localized focus are liable to spread from country to country unless there is some closely co-ordinated and efficient organization to take suitable preventive measures; and for lands such as India, where,—in addition to cholera,—plague, small-pox, and many other grave infectious diseases are endemic, the work of the International Health Organization is peculiarly important, since history affords many instances, —long before the introduction of modern means of transport, which have increased the potential danger substantially,—in which these scourges have spread outwards from their original focus over enormous distances with devastating effect. At present the organization subdivides its activities geographically into 'Zones', and India falls within the 'Eastern Zone', whose headquarters are at Singapore. The functions of the Bureau of the International Health Organization there, are to broadcast information concerning the epidemiological conditions of the countries which fall within its sphere of operations, to co-ordinate research, and to organize international campaigns against infectious diseases. During the year under review the sixth annual session of the Advisory Council of the Bureau was held at Singapore in the month of December, and was attended on behalf of the Government of India by Major-General J. D. Graham, C.I.E., the Public Health Commissioner. The Government was also represented at the meetings of the Health

Committee of the League of Nations Health Organization at Geneva during September and October, and of the Permanent Committee of the *Office International d'Hygiene Publique* at Paris in May and October; and amongst other international meetings on health matters to which delegates were sent, mention may be made of the Second International Congress on Malaria at Algiers in May 1930; the Congress of the Royal Sanitary Institute at Margate in June; the Conference on the Sanitary Control of the Pilgrimage to the Hedjaz at Paris in October; the Session of the League of Nations Leprosy Commission at Bangkok in December; the Eighth Congress of the Far Eastern Association of Tropical Medicine at Bangkok in December; and the Conference of the Leonard Wood Leprosy Memorial Associations at Manila in January 1931.

From discussion of international co-operation in the prevention of disease, we may logically proceed to consider the problems that arise from the abuse of intoxicating drugs and liquors in this country, and from their export. As regards the export of opium, the policy of the Government of India is in any case governed by international agreements, but has actually gone considerably further than these require; export of opium to any non-Asiatic country other than the United Kingdom is prohibited altogether,—except for negligible quantities despatched to Zanzibar and Pemba,—and the quantities received by the United Kingdom are strictly controlled by means of the "import certificate" system, and used for medical and scientific purposes only. The "import certificate" system was also applied in 1923 to other drugs covered by the Hague Convention, and in 1926 the order was revised in accordance with the new definitions contained in the Geneva Convention. In the same year it was announced that exports of opium for other than medical and scientific purposes would be thenceforward reduced by 10 per cent. annually until they ceased altogether. In consequence, the exports in 1931 will be half what they were in 1926. From 1925, the transhipment at ports in British India of any of the drugs covered by the Hague Convention was prohibited unless covered by an export authorization or diversion certificate issued by the exporting country, and this order was revised in 1927 in the light of the Geneva Convention.

The adoption of this policy by the Government of India has entailed great financial sacrifices, and the earnestness and success with which it has pursued it is amply demonstrated by the detailed

reports and statistics issued by the Secretariat of the League of Nations. During the last twelve years the area under poppy cultivation in British India has been reduced by 82·31 per cent., and the poppy-growing areas are now almost entirely confined to the United Provinces, where the total number of acres laid down to this crop amounted in 1930 to only 36,612. The Indian States too have to a great extent brought their regulations regarding opium into conformity with those of the Government of India. Simultaneously with the decline in the export of opium there has been a decline in indigenous consumption. Between 1910-11 and 1929-30 the consumption in Assam fell from 1,509 to 591 maunds; in Bengal from 1,626 to 994; in Bihar and Orissa from 882 to 605; in Bombay from 1,435 to 661; in the Central Provinces from 1,307 to 551; in Delhi from 84 to 39; in Madras from 1,039 to 894; in the North-West Frontier Province from 69 to 56; in the Punjab from 1,584 to 974; and in the United Provinces from 1,545 to 546 maunds. Figures for 1929-30 have not been received from Burma. In 1910-11 the consumption for the whole of British India excluding Burma was 11,083 maunds; in 1929-30 it was 6,025 maunds. Assuming that consumption in Burma was the same in 1929-30 as in 1928-29, the total decrease for British India between 1910-11 and 1929-30 was from 12,527 to 6,657 maunds. Within the same period,—and making a similar assumption with regard to the figure for Burma,—the revenue derived from opium in the various provinces of India rose from Rs. 1·63 to Rs. 3·39 crores, owing to the enhanced prices at which the drug has been sold. This offsets to some extent the loss to the tax-payer entailed by the limitation of exports, though it should be remembered that the gain, such as it is, is made by the provincial Governments, whereas the whole loss falls on the Government of India.

Collective action by the provincial Governments with regard to the opium problem was first initiated in 1926, when a Conference of provincial Ministers charged with the administration of excise was held to discuss problems connected with the co-ordination of excise policy throughout India; and the Government of India suggested certain measures which might contribute towards their solution,—urging that in particular an attempt should be made to ascertain the actual causes for the existence of what are known as "opium black spots". The Governments of Bengal, Bihar and Orissa, Bombay, the Central Provinces and Madras accordingly all

appointed committees to enquire into conditions in certain specified areas, and the Government of the United Provinces conducted enquiries through its licensing boards; and in May 1930 a Conference was held in Simla to consider their reports. The proceedings were opened by H. E. the Viceroy, and representatives from Ajmer, Assam, Baluchistan, Bengal, Bihar and Orissa, Bombay, Madras, the Punjab, and the United Provinces attended. For the purpose of the Conference "opium black spots" were defined as being areas in which the proportion of the population which individually uses opium to excess is so high, or the abuse of opium in other ways,—for example by injudicious administration of the drug to babies,—is so prevalent, as to account for an abnormally high average rate of consumption, taking the population as a whole into consideration. This definition of "black spots" was adopted because the policy of the Government of India and of most provincial Governments is aimed not at the total suppression of the use of opium in moderation (except for smoking) but at the suppression of its excessive use. Where, therefore, a high average rate of consumption is due not to the prevalence of abuse, but simply to the fact that moderate consumers are for any reason more numerous than is usual elsewhere, it is not fair to say that a "black spot" exists. After deciding upon this definition the Conference then proceeded to consider the question whether any "opium black spots" actually exist, and if so where they are, what causes can be assigned for the prevalence of excess in these places, and whether any remedies can be suggested. After exhaustive discussion it appeared that parts of Assam and Calcutta might correctly be termed "black spots", and Orissa, also, in so far as smoking accounts for 20 per cent. of the consumption there, and that there was a case for investigating the causes of high consumption in the Ferozepore District in the Punjab. In other places it was considered that there was no evidence of prevalent excess. In one area, the East Godavari District of the Madras Presidency, the high consumption is due partly to the use of opium by a large number of consumers (estimated at 160,000) to relieve the discomfort of malaria and rheumatism, which are common there, and partly to smuggling to Burma, where the price is much higher. In Gujerat the high consumption in certain Districts is ascribed to the prevalence of Vaisnavism, which is found to be accompanied by a low consumption of alcoholic liquor and a more general

recourse to opium. Some tracts where Muhammadans form a large proportion of the population exhibit the same features. In places of pilgrimage such as Pandharpur, Benares, and Puri, there is a large floating population which falsifies the statistics, and the religious mendicants who congregate in such places are often habitual consumers; moreover, any large town tends, as motor traffic develops, to become a distributing centre for an ever extending tract. The Conference therefore agreed that it would be misleading to consider any town in isolation apart from the surrounding area. The Government of India, however, suggested to provincial Governments that in selected places other than the admitted "black spots", where the total consumption is high, an analysis of the figures of consumption should be made, in order to ascertain if possible to what extent harmful doses are common. This has been done in Calcutta, where it was found that 25 per cent. of the consumers took excessive doses of more than 12 grains and accounted for 75 per cent. of the consumption. Yet even there, it is interesting to remark that a well qualified Indian observer declared before the local committee that there was no "menace to the health, morality or social well-being of the population at large". It would also appear to be desirable, though probably much more difficult, to obtain more exact information as to the extent to which opium is administered to children. The extent to which opium sold in one place is consumed by persons resident elsewhere might also with advantage be investigated in some places. In regard to remedies, the policy of high prices, reduction of the number of shops, and restriction of the limit of sale and of personal possession has proved effective everywhere, over a period of years, in reducing consumption to a remarkable degree. To quote only two examples, in the Central Provinces the consumption fell in ten years by more than 50 per cent., and in the United Provinces by 59 per cent. So far as administration of opium to children is concerned it is conceded on all hands that propaganda and welfare work are the only possible means of combating it. Other subjects discussed by the Conference may be referred to briefly. Smuggling from some Indian States was said to be an obstacle to temperance measures in certain parts of British India. The policy of raising sale-prices, to which we have already referred, was said to be limited in its effectiveness by this illicit traffic, and, in addition, by its tendency to drive consumers to use more pernicious drugs such as cocaine or *ganja* as substitutes for

opium. Registration or rationing of consumers except in the case of excessive consumers was not favoured; the former, at all events, is hardly consistent with the policy of tolerating moderate use. An attempt on the part of local Governments to equalize sale-prices on their respective borders by mutual consultation was recommended. The important technical question of the supply of opium in the form of wrapped tablets was discussed, but it is not yet certain whether the demand for opium in this form will be sufficient to justify expenditure on the machinery that will be required. The Conference also recorded that it was in favour of the formation of a Central Intelligence Bureau under the Government of India, to collect, collate and disseminate information regarding the illicit drug traffic, especially in its international and inter-provincial aspect; but the prevailing financial stringency has prevented any action being taken on this proposal for the present.

Apart from what it achieved by way of detailed recommendation and discussion, the Conference also served a useful purpose by drawing public attention to certain important generalities. As was observed by H. E. the Viceroy, in his inaugural speech it is admitted, even by those who criticise the policy of the Indian Government in regard to opium, that throughout the greater part of the country no opium evil exists. The average consumption in India as a whole is less than twice "the League of Nations' standard" of 6 seers per 10,000 per annum. But that standard is really not applicable to India; it was framed for the purely medical needs of countries with highly organized medical services, where the use of opium as an indulgence, so common here, is entirely unknown. And in India, apart from this "euphoric" use, there is and for many years to come must continue to be a large *quasi*-medical use, especially in malarial tracts, which, whatever its real value, if any, may be, could not be interfered with without causing grave and widespread discontent. Finally, it was emphasized that what is known as the "Secretary of State's standard", namely 30 seers per 10,000, is in no way suggested as a reasonable rate of consumption. It was merely selected as indicating a sufficiently wide departure from the normal rate for India, as a whole, to suggest the existence of specific causes which it might be easy to detect and instructive to study, and for which appropriate remedies might be devised; and as a matter of fact, in several of the places for which committees of investigation were appointed, such as Bombay,

the Panch Mahals, Kaira and Ahmedanagar, the rate of consumption is below 30 seers per 10,000.

Individual action by the provincial Governments in the matter of opium has largely consisted in the passage of legislation designed to suppress or limit the actual smoking of the drug, which constitutes a problem quite distinct from those arising out of the other uses of it to which we have referred. Smoking is not a practice which is at all prevalent except in the towns, and only seems to amount to a serious evil in Assam, Burma, Orissa and Calcutta. The Government of Assam has passed legislation designed to lead to total prohibition of opium-smoking by enforcing a stringent system of registration and rationing, the ration being progressively reduced by 10 per cent. per annum. The Government of Burma has also adopted very drastic measures for the ultimate extinction of the practice. In 1924 it issued rules prohibiting any person other than a registered smoker from possessing prepared opium, and a register for opium smokers was opened for six months in January of that year. No new names can be added to the register, and with the gradual disappearance of the persons originally registered, opium-smoking will cease to be permitted except in a few backward tracts. The total number of registered smokers in Burma on the 31st of December 1929 was 12,151. In Bihar and Orissa opium-smoking is prohibited except by licensed smokers. In Calcutta it is proposed to attack the excessive consumer direct, by registering in the first instance all those who require doses of over 12 grains and closing the register to newcomers; and legislation is under consideration for making opium-smoking by persons other than registered smokers a penal offence throughout Bengal. In 1929, the Government of the Central Provinces passed legislation prohibiting opium-smoking in company and designating an assembly of two or more persons an opium-smoking assembly. Under the respective opium-smoking Acts of the Punjab and the United Provinces opium-smoking in company has been prohibited there; and the provisions of the Punjab Opium-smoking Act have been extended to Delhi, the North-West Frontier Province and Baluchistan. The Governments of Bombay and Madras have also for some time had under consideration the passage of Bills designed to suppress opium-smoking within their respective areas of jurisdiction.

An important "All-India" measure known as the Dangerous Drugs Bill, designed to centralize and vest in the Governor-Gene-

ral in Council the control over certain operations relating to dangerous drugs, and to increase and render uniform throughout British India the penalties for offences relating to such operations, was introduced in 1928 and passed in 1930; it should prove of great assistance to the authorities in grappling with the problems raised by drug-addiction. Of late years the increased use of cocaine and allied drugs in the larger cities of India has attracted a good deal of public attention. The authorities are fully alive to the danger and have developed, and are continually improving, detective and preventive measures, and seizures of these drugs and arrests of those who traffic in them are frequent. Towards the end of the year under review a special officer was deputed to investigate the problem of illicit import of drugs into India from the Far East. The true coca plant is not grown in India, nor is cocaine manufactured here; but nevertheless, as a precautionary measure, several provincial Governments have lately passed legislation prohibiting the cultivation of cocaine-yielding plants. These local Acts however have now been superseded by the Dangerous Drugs Act, since it contains provisions to the same effect.

On the whole, the consumption of alcoholic liquors does not constitute a serious problem in India except in the large industrial towns. The Muhammadans are comparatively unaffected by it, owing to the well-known religious injunction of their religion against the use of alcohol, which is for the most part faithfully obeyed. Among the congested labouring population of Bombay and Calcutta, and in a few other places, the evil exists, but undoubtedly India compares very favourably with other countries in this matter. There has, nevertheless, been a good deal of public discussion in recent years on the desirability of introducing compulsory prohibition. Much of this discussion is unquestionably inspired by genuine reformist zeal; at the same time it has also been made to serve regrettable political ends, and has been used by members of the Congress Party and others, both at the time of the non-co-operation movement after the War, and during the similar troubles which occurred during the period under review, as a means whereby drink-shop proprietors may be prevented, by intimidation, picketing and boycott, from carrying on their lawful trade, in order that the revenues of the Government may be reduced. The general trend of official policy for many years has been to reduce the consumption of alcoholic liquors to a minimum, but absolute

prohibition, in the sense that there should be no consumption of liquor except for medical or ritual purposes, would be impossible to enforce in India, not only for geographical reasons,—which are obvious,—but also because of the exceptional facility with which "toddy" and similar inebriating decoctions can be manufactured in the country itself. The better plan appears to be to continue the present policy adopted by the Government of India and some provincial Governments, which aims at inculcating temperance by providing facilities for persons who require reasonable refreshment from alcoholic drinks, but regularizing the price in such a way as to discourage their abuse. The Government of India is not now primarily concerned with the consumption of alcoholic liquors except those imported from abroad, the duties on which form a useful item in the Central Revenues; and these duties, as we have seen in Chapter VI, were substantially increased during the period under review, and have moreover been supplemented in some Provinces by an increase in the excise duties. From time to time, however, the subject of alcoholic drinks comes up for discussion in the Legislative Assembly or the Council of State, and on these occasions the Government of India has made it abundantly clear that its policy in such areas as are subject to its direct administration is to promote temperance and moderation. At different times the Governments of Bombay, Madras, and the United Provinces have accepted prohibition or abstinence in general terms as the goal of their policy, and in 1927, the Madras Legislative Council passed a resolution recommending that the total prohibition of alcoholic drinks in the Presidency within the next 20 years should be the declared object of the provincial Government's policy. A local option Bill was passed in Assam in 1926, and the Government of the Central Provinces aims at the ultimate extinction of the consumption of country-made spirit. There is, however, reason to believe that there are limits beyond which the policy of checking the consumption of liquor by raising the price cannot safely go, without directly encouraging the manufacture of illicit liquor. The Punjab Government has had to reduce the duty on country spirit, and the Bombay Government, in its review of the Administration Report of the Excise Department for 1926-27, explained certain administrative difficulties which had arisen out of the policy of partial prohibition, and stated that on account of financial considerations further progress in the direction of prohibi-

INFANTILE MORTALITY *PER MILLE* OF BIRTHS IN BRITISH INDIA AND ENGLAND AND WALES IN 1928.

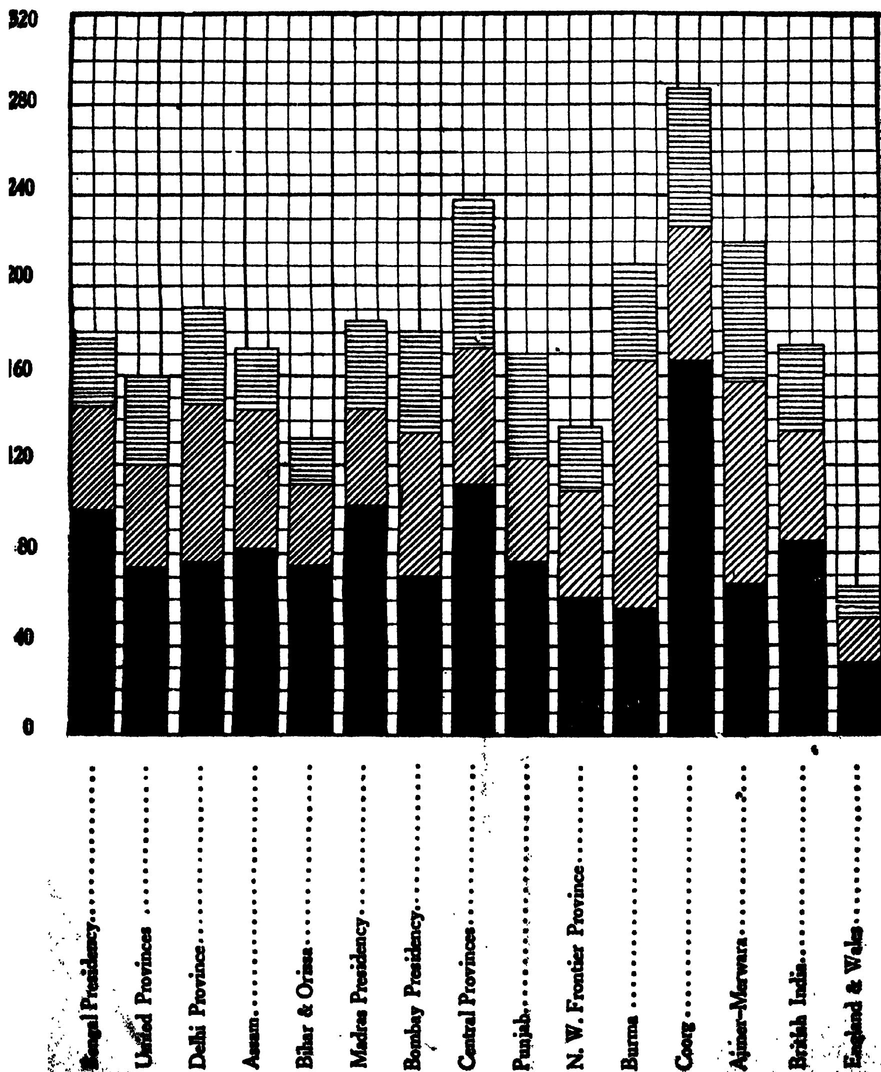
Infantile mortality rate per mille of births.

Under one month........

One to six months.......

Seven to twelve months...

Note:—Each small square represents a rate of ten per mille.



tion must necessarily be slow. On the whole, therefore, the various governing authorities in this country may be said to have adopted all reasonable measures within their power to guard against the spread of the drink habit, and to make it difficult and expensive to gratify.

Before we pass on to the other matters that fall within the scope of this Chapter, there is one remaining medical problem of great importance which requires consideration; that is, the health and material welfare of women and children in this country. The manner of life to which ancient tradition even now condemns the larger part of the female population in India, and in particular the medical and social problems which are created by the institutions of *purdah* and child-marriage, have aroused widespread interest throughout the world, and as the years pass the urgent necessity of providing medical facilities more fitted to mitigate the consequences of these customs has obtained increasing recognition, both from official and private individuals and institutions. Probably the first effective organization for putting modern medical assistance within the reach of the more socially backward sections of the female population was that established by the Countess of Dufferin, wife of the Viceroy, in the Eighties of last century; and since that time the wives of other Viceroys have extended and developed her work, with the result that, prior to the period now under review, there were no less than three important semi-official institutions providing medical relief for Indian women and children. The first of them, generally known as the Countess of Dufferin's Fund, or more properly as the "National Association for Supplying Medical Aid by Women to the Women of India", has for its object the training of women as doctors, hospital assistants, nurses, and midwives, as well as the provision of dispensaries, wards and hospitals. As originally constituted, the institution made a promising start, but it was soon realized that its income would be insufficient for the full attainment of its objects, and in particular that the remuneration that it offered to women doctors was insufficient to enable it to secure the services of really well-qualified and capable ladies. As a result, a special Women's Medical Service was constituted in 1914 as an off-shoot of the main organization. "The National Association for Supplying Medical Aid to the Women of India" therefore now consists of three separate sections, that is, of a central administra-

tive office, together with the organization of the original Dufferin Fund and that of the Women's Medical Service,—of which the last has now become the most conspicuous and important. The Government of India for several years past has subsidized it through the Dufferin Fund to the extent of Rs. 3,70,000 per annum.

In our last two Reports we have explained why no substantial increase in the strength or activities of the Women's Medical Service has been possible since 1927; and similar circumstances conspired to prevent advance during the year under review. The subsidy from the Government of India to the Dufferin Fund was contributed as usual; and this sum, together with what was forthcoming from the provincial Governments to which six officers of the Service have been seconded, was enough to enable the salaries of the 44 members of the Service to be paid. But although at the suggestion of the Government of India repeated requests have been made that provincial Governments should subscribe to the maintenance of the officers employed in the territories subject to their administration, and so enable the Dufferin Fund to increase the *cadre* of doctors, the response has hitherto been so meagre and uncertain that there seems no possibility at present of taking more qualified medical women into the Service than would suffice to maintain it at its present strength. During the year under review the Governments of Bengal, Bombay, Madras, and the Punjab pleaded financial stringency as the reason for their inactivity in the matter, and again refused to pay even half the salaries of the officers of the Service in their employment. Bihar and Orissa, however, and the Central Provinces, repeated their former payments, and the Government of the United Provinces for the first time made a contribution which amounted to Rs. 13,500—but this, it is understood, was in the nature of a non-recurring grant. Although no fresh post was created during the year, the number of new entrants to the Service was 6. Three doctors were recruited from England, 2 of whom are specialists, the one in maternity and child welfare work and the other in radiology. The latter will be employed at the Lady Hardinge Medical College at Delhi. The other 3 recruits were graduates of Indian Universities who had worked for three years in the Service Training Reserve and had then taken post-graduate courses in England at the expense of the Dufferin Fund. On the 1st of January 1931,

the *cadre* actually amounted to 47, of whom 3 were on special leave preparatory to retirement. The number of doctors normally on leave is 6, and the remaining members of the Service, during the year under review, were distributed throughout India as follows: in Bengal there were 3; in Bihar and Orissa 2; in Bombay 3; in the Central Provinces and Berar 5; in Delhi 9, of whom 8 were at the Lady Hardinge Medical College; in Indian States 2; in the Madras Presidency 2; in the North-West Frontier Province and Baluchistan 2; in the Punjab, including Simla, 3; and in the United Provinces 7.

This staff,—that is to say a *cadre* of no more than 44 for the only officially recognized organization of women doctors in India,—is of course utterly inadequate for the country's needs, and were it not for the fact that additional women doctors are working in various private medical institutions such as mission hospitals throughout India, the deficiency would be still more pronounced. Apart from members of the Women's Medical Service, the provincial Governments do indeed employ a certain number of women doctors in "sub-charge" under Civil Surgeons in dispensaries for women in connection with Civil Hospitals,—some of whom are in charge of separate *purdah* institutions; but these doctors mostly hold qualifications only of the Sub-Assistant Surgeon class, and are paid no more than between Rs. 75 and Rs. 150 *per mensem;* and although they undoubtedly relieve much distress in minor ailments, they are not qualified to treat women afflicted with serious disease. Such patients therefore, unless a first-class woman doctor happens to be within call,—or unless they are rich enough to travel to the nearest specialist,—must summon a male doctor who may have insufficient experience of women's diseases,—or else remain untreated; and despite the fact that the restrictions of the *purdah* system are rapidly loosening, few Indian women, even now, care to summon a male doctor to deal with matters connected with child-birth or diseases peculiar to the female sex until the last moment. It is therefore unquestionably true that the establishment of a stronger service of women specialists, supplied with well equipped hospitals suitably placed throughout the country, is an urgent necessity, particularly in those areas where the women are socially backward and observe *purdah* strictly. And not only is there an actual need, but also a steadily growing demand; for the spread of education and the improve-

ment in communications,—particularly the extension of motor transport, has in recent years caused a marked increase in the use of such meagre medical facilities as at present exist. Each year patients tend to arrive at the women's hospitals from further afield, many of them travelling by motor omnibus from villages hitherto considered quite inaccessible except by means of bullock carts, whose rate of progress on the unmetalled *kachha* roads seldom averages more than 2 miles an hour. Moreover, apart from the lack of qualified women engaged in purely medical work, there is also a serious dearth of women doctors employed on the administrative side; indeed, until an administrative medical officer can be appointed as assistant to the Inspector-General of Civil Hospitals in every Province, endeavours to provide adequate medical aid for the female population of India are bound to remain greatly handicapped. At present, if we exclude an interesting appointment made to a not dissimilar post in the Madras Presidency during the year, which we shall shortly discuss, there is only one woman doctor holding an appointment of exactly this kind,—in the United Provinces; and the remarkable progress made there during recent years, both in medical aid and in preventive work amongst women and children, has certainly been largely due to the activities of this lady, whose official position and practical knowledge enables her to report direct to those in authority what the needs of the women and children in the Province really are. Some years ago a similar post was held by a member of the Women's Medical Service in the Punjab; but when Medicine was made a "Transferred Subject", and orders issued that officers of the Service could only be seconded to Governors' Provinces for work in official medical institutions if their pay was met entirely by the local Governments concerned, the post was abolished as soon as the next vacancy occurred, on the ground that there was insufficient money to maintain it; and those responsible for administering the Dufferin Fund were powerless to come to the rescue themselves,—despite their appreciation of the value of the work done,—owing to the existence of this new rule debarring officers holding such appointments from receiving remuneration from other than provincial sources.

Before turning to consider the other organizations devoted to the amelioration of the lot of Indian women and children, we must briefly describe an institution associated with the Dufferin

Fund which has already been mentioned *en passant*, namely, the Lady Hardinge Medical College at Delhi. As we have seen, no less than 8 officers of the Women's Medical Service are employed as members of the teaching staff of this establishment, whose chief function is to enable Indian women to qualify for the degree of M.B., B.S. (Punjab),—the course of training provided being complete from the pre-medical science school right up to the final stage. Among the pupils under instruction, who come from every part of the country, are girls belonging to almost all the different communities of India. During the year under review, the total number of students in residence was 129, of whom 45 were Hindus, 27 Indian Christians, 13 Europeans, 13 Anglo-Indians, 13 Muslims, 10 Sikhs, 3 Parsis, 2 Jains, and 3 members of other communities. Ten students passed out as fully qualified doctors during the year, and despite the difficult financial circumstances which prevail at present, it is rare for any graduate of the College to remain unemployed for more than a few weeks after qualifying. Attached to the College is the Hospital, which is designed for the use of women and children only. It was equipped during the year with a new and up-to-date X-Ray Department, which H. E. Lady Irwin opened in January, the cost being covered by a grant of Rs. 44,000 from the Government of India. A gift of radium was received from the Dehra Dun Radium Institute during the period under review; the amount, however,—69 milligrammes,—was not sufficient to enable the correct dosage to be administered in some cases, but shortly after the close of the period under review a further supply was received. During the course of the Inauguration Ceremonies in New Delhi in February, Lord Hardinge, who had come to India to attend them, paid a visit to the College,—whose foundation stone he had laid, as Viceroy, in 1913,—and declared himself greatly pleased with its progress and achievements. There is a statue of his wife,—the late Lady Hardinge,—in the College grounds, and he placed a wreath at the foot of it before departing. In last year's Report we mentioned that the Government of India had appointed a committee to investigate the finances both of the College and Hospital, and to advise whether any alteration is necessary in the constitution of the Governing Body; and that as a preliminary measure Mr. Nehru, one of the members of the committee, was making a detailed enquiry into the monetary position of the institution. The

members of the Committee took the memorandum prepared by Mr. Nehru as the basis of a careful discussion of the whole subject, and submitted a report to the Government of India in August 1930. At the time of writing the decisions of the authorities on the Committee's recommendations were not known, but in the meantime they had announced their intention of continuing for another year the annual grant of Rs. 3,14,500 previously received by the institution from Central Revenues.

In previous years, after describing the activities of the Countess of Dufferin's Fund and its adjunct, in the Women's Medical Service, there have been two more semi-official organizations for providing medical assistance to women and children for us to deal with,—namely the Victoria Memorial Scholarships Fund and the Lady Chelmsford League,—as well as the Indian Red Cross Society, which was a purely voluntary undertaking. But our task this year is simplified, since the change which, in our last Report, we indicated might possibly occur has now taken place, and the two former organizations have been incorporated in the special Maternity and Child Welfare Bureau of the Indian Red Cross Society. The amalgamation however was only effected on the 1st of January 1931, and it will therefore be best, before we examine the activities of the re-constituted Welfare Bureau, to indicate what the main functions of the two old semi-official institutions have previously been.

The object of the Victoria Memorial Scholarships Fund, which was founded by Lady Curzon about thirty years ago, was to provide means whereby the indigenous *dais*, or midwives, in this country may be given at least some rudimentary training in the principles of modern maternity practice. That adequate medical aid should be provided for Indian women at the time of child-birth, —particularly in the rural parts of the country, which contain about 90 per cent. of the population,—is obviously a matter of immense importance; but it is also, in view of the illiteracy, superstition, and uncleanly habits of the ordinary *dai*, and the degrading and menial tasks which her clients are accustomed to require her to perform, extraordinarily difficult. So hopeless, indeed, has the task of raising the *dais'* standards of work to a tolerable level appeared to some authorities to be, that they have until recently advocated abandoning the attempt altogether. Against this, however, is the fact that educated women who have

received training in modern methods of midwifery can hardly earn a decent living in the villages without some form of subsidy, and for other obvious reasons do not as a rule take kindly to village life,—even those who have been born and brought up in the remoter parts of the country tending to seek work in the towns; in addition, in many villages it is unsafe for literate and educated women to live alone. Thus, from the very nature of things, improvement in the methods of maternity work in rural India, either by means of training and educating the *dais*, or by endeavouring to acquire the services of women of a different type, is bound to be a very gradual and apparently disappointing process. Encouragement may nevertheless be derived from the fact that the problems and needs of rural India have recently been obtaining an increasing amount of popular attention, which in time is bound to have some practical effect. During the period covered by our previous Report, as we indicated therein, the Committee of the Victoria Memorial Scholarships Fund undertook a comprehensive survey of the results which the organization had achieved since 1917, as a result of which some interesting facts and opinions were brought to light. The method adopted was to hold what were known as "regional" conferences at Lahore, Lucknow, Ajmer, and Nagpur, consisting of a small number of medical men and women and health workers, carefully selected for their experience and knowledge of the work. It was generally agreed that the progress made since the last general review of the organization's achievements was undertaken in 1917 had actually been slow throughout the country as a whole,—although in some places, especially the towns, rapid and spectacular results had been obtained. That an increasing number of *dais* were under training was due to the fact that health visitors have increased in large numbers since 1919, and are themselves imparting a certain amount of instruction in elementary hygiene. If these women are of reasonable education and experience they as a rule make excellent teachers, but it was admitted that in many places they could not be said to possess these qualities, and in addition often have not the personality to control the *dais*, who are mostly older women whose acquaintance with maternity work covers a longer period. Another defect of the health visitors, as such, is that they are expensive both to teach and to maintain. Some critics of the existing policy of the authorities are indeed went to contend that the whole project for training

health visitors is erroneous, on the ground that it is based either in " European " or " urban " considerations which are inapplicable to rural India,—and that although good work is undoubtedly done by these women in certain places, the wisest course, for a poor country such as this, would be to concentrate at first solely upon obtaining the services of a larger number of properly qualified women doctors. In any case, the urgent need for ensuring continued supervision over the work of the *dais* after they have been given training was stressed at all the conferences that were held,—though how it is possible to provide really efficient supervision is at present difficult to see, partly for personal, and partly for financial reasons; for on the one hand the number of competent midwives or health visitors available for undertaking the task is inadequate, and on the other, the expense involved in supervising them is certainly beyond the means of most rural areas and of many of the municipalities also. Closely associated with the question of supervision is that of registration. In previous issues of this Report reference has been made to the fact that Bills for the registration of nurses, health visitors, and midwives, were prepared for introduction into the Legislative Councils both of the Madras Presidency and the Punjab, and that the Madras Bill was passed into law during the year 1929-30; at the time of writing, however, the Punjab Bill, although it was drawn up more than twelve months previously, has not yet been introduced. On the other hand, the Government of the United Provinces is making some progress along slightly different lines, by persuading municipalities and other local bodies to introduce bye-laws regulating the activities of midwives,—which seems to be a hopeful avenue of advance. As regards ante-natal work,—that is, the care of the expectant mother, which has only been undertaken by the authorities since 1917,—most of the experts on the subject are agreed that it is theoretically sound, but it was evident from the discussions at the conference that there is not much popular enthusiasm for it; this is unfortunate, since the arguments for extending activities of this kind for the direct benefit of the patients alone are powerful enough, and at the same time their extension would also have the indirect advantage of facilitating the training of *dais*. Perhaps the most important of all the conclusions reached at the conferences, however, was that it is absolutely necessary to continue training the indigenous *dais*, since

there seems no prospect of supplanting them by other trained midwives for years to come. At the last series of conferences in 1917, some authorities, as we have indicated, were in favour of giving up attempting to improve the methods of these women altogether; but during the intervening twelve years, the progress made towards replacing ordinary *dais* with women of another type was negligible, and it was agreed that instead of endeavouring to do without them the wisest course is to increase the numbers under training, to perfect,—so far as possible,—the training itself, and to try to provide some form of supervision whereby their standards of work may be maintained at the level to which they have been raised. Naturally the progress which can be achieved in increasing the efficiency of *dais* must depend to a large extent on the amount of encouragement they receive from the public, and although some sections of the community are beginning to appreciate modern methods of midwifery, and to employ only those women who have received training in them, the co-operation obtained from others is anything but satisfactory, and the *dais* complain bitterly, not merely of low rates of pay, but of the fact that necessities like soap, hot water, and clean linen are begrudged them. Such improvement as there is in the attitude of the public is of course most marked among the upper and middle classes in the towns. On the whole it would probably be true to say that the demand for *dais* trained in modern methods is at present not appreciably in advance of the supply.

As regards the Lady Chelmsford League, this organization was established in 1920 primarily with the object of providing financial assistance for the various Health Schools throughout the country in which health visitors are trained; and the services which it has rendered, not only in this direction, but also by focussing public opinion upon the necessity for the practical activities which it undertakes, have been very great. The actual number of Health Schools in existence during the year was six, as against seven in 1929-30,—the Madras school, whose re-opening was described in our previous Report, having had to be closed down again owing to lack of official support and to the difficulty experienced in obtaining a suitable superintendent. On the other hand, plans were maturing during the year for establishing a new Health School in Rangoon, and meanwhile some Burmese students have been undergoing a course of training at the Lady Reading Health School

in Delhi. Moreover the closing of the Health School in Madras was to some extent offset by the encouraging appointment made during the year to which we have already indirectly referred, namely that of a qualified Indian woman doctor as assistant in maternity and child welfare work to the Director of Public Health in the Presidency; hitherto no post of precisely this nature has ever been created,—though, as we have seen, the Government of the United Provinces now employs a member of the Women's Medical Service as assistant to the Inspector-General of Civil Hospitals there, and at one time a similar post was in existence in the Punjab. Of the six Health Schools in existence in India, those at Lahore and Nagpur are entirely supported and managed by the provincial Governments concerned, and those at Lucknow and Delhi receive substantial official assistance. The Poona School is run by the Seva Sadan Society. The Bengal school, however, is still forced to carry on its work without Government assistance of any kind. Here again, however, encouragement is to be derived from the fact that the construction of the Public Health Institute in Calcutta, which has been described in an earlier part of this Chapter, and which will contain a section devoted to maternity and child welfare, will it is believed be completed by the time the next of these yearly Reports is issued. The course of training provided in this special section will be for highly qualified graduates in medicine, for whom no such facilities have hitherto existed in this country; and it is certain that this development will make a big difference to child welfare work in India, since trained medical workers will be available for filling posts such as that which has recently been created in Madras, and for taking charge of health schemes inaugurated in the larger cities. At the Health School in Lucknow, which readers of our previous volumes will recollect was established in 1928, the possibility, which we mentioned in our previous Report, that a similar course to that contemplated at Calcutta would be provided, not for highly qualified medical women, but for those of the Sub-Assistant Surgeon class, was about to materialize at the end of the period under review; it has been devised to enable practitioners to carry on health work in addition to purely medical activities, and if it is successfully established, it should ensure a small but steady supply of women workers who will be particularly useful in rural districts. In last year's Report the hope was expressed that the activities

of the Royal Commission on Labour would stimulate the demand for the services of all workers on behalf of Indian mothers and children in industrial areas,—that is to say, of women doctors, health visitors, and trained midwives. At the conclusion of the period now under review the Commission's report was still unpublished, and its recommendations therefore unknown; but despite this some interesting developments had taken place,—two health workers having been appointed in the Bihar coal-fields, one directly under the Jharia Mines Board of Health and the other as an employee of one of the Coal Companies. The appointments have proved popular among the workers, though naturally they as yet find it hard to understand what true health work consists in. It is to be hoped that the present industrial depression will not prevent similar appointments being made in other mining areas. In Bengal a Committee has been appointed by the Jute Mills Association to make a survey of the needs of the women workers, which should lead in time to the adoption of a definite policy for supplying medical assistance for female employees in this industry. Among the subsidiary activities of the Lady Chelmsford League, the organization of "health weeks" and "baby weeks" has been one of the more important, but owing to economic depression and political disturbances the celebrations during 1930-31 were less numerous than in previous years. Entries for the "Irwin Challenge Cup", which was given for competition during "baby week" by Rajah Raghunandan Prashad Singh, M.L.A., were on a sadly reduced scale; the winning District was Bellary, in the Madras Presidency, Rangoon being the "runner-up". It has been decided in future to offer a cash prize of Rs. 500 in addition to tenure of the cup, as an inducement to greater competition.

Although the formation of the Maternity and Child Welfare Bureau of the Indian Red Cross Society, through the amalgamation of the Victoria Memorial Scholarships Fund and the Lady Chelmsford League with the child welfare organization of the Red Cross, had only been effected three months before the end of the period under review, it was already clear, by the end of March, that the step was well justified and would lead to a substantial increase in efficiency. The reconstituted Bureau has been placed under the charge of a highly qualified woman doctor who has had long experience of maternity and child welfare undertakings, and the total volume of work has already increased substantially. At

the time of writing, the amalgamation effected at headquarters had been followed at several of the provincial centres, and resulted in a gratifying improvement in co-ordination there also. The child welfare activities of the Indian Red Cross Society, as we have indicated in previous issues of this Report, have been almost identical both in object and method with those undertaken by the two other bodies, and although every endeavour was made in the past to prevent overlapping and confusion, it was increasingly realized that it must remain difficult to achieve this without establishing unity of control. Of the actual maternity and child welfare work done by the Red Cross during the nine months prior to the amalgamation we need say little, owing to its close similarity to the activities we have described in the two preceding paragraphs,—though it must be borne in mind that its achievements in this field have been on a very large scale, as much as Rs. 1,81,683 having been spent on it during the calendar year 1929, and Rs. 2,10,915 during 1930. In addition to organizing child welfare centres, training *dais*, granting scholarships for teaching midwives modern hospital methods, organizing nursery schools, educating women in mothercraft and sewing, and organizing " baby weeks ", there is one particular aspect of its work that deserves individual mention, namely its achievements on behalf of the women and children of the Indian Army. Except for the fact that twelve Sub-Assistant Surgeons are employed for the purpose, no official provision of any kind is made for rendering medical assistance to the dependents of Indian soldiers, and the activities of the Red Cross on their behalf have consequently been of very great value. Some of the welfare schemes subsidized by the Society in the bigger cantonments are on an extensive scale and have done much good; and the fact that the army authorities have recently doubled the number of Sub-Assistant Surgeons in their employ,—it amounted to only six in 1929-30,—affords reasons for hoping that they will ultimately see their way to assuming full responsibility for the work which has hitherto been left to voluntary workers.

In addition to what it achieves through its Maternity and Child Welfare Bureau, the Indian Red Cross Society carries on a number of other important activities, and it is evident from its latest annual report that it is coming to be regarded more and more as one of the most important co-ordinating agencies for all voluntary social and medical work throughout the country. Propaganda on

behalf of public health in general,—as contrasted with the health of women and children only,—is one of its most conspicuous undertakings, and large quantities of pamphlets, posters, and magic lantern slides are issued each year through its central *depôt;* cinematograph films are now also being used with good effect. During 1930-31 the total number of pamphlets that were issued for use throughout India,—in as many as 11 languages,—amounted to 25,721. Several new posters were issued, including a set depicting the rules of health, and a " safety first " poster in which attention was drawn to the danger of wearing loose clothing near machinery. The Bihar and Orissa Branch took an interesting step in opening a Red Cross Health Museum in Patna in November, 1930, wherein models and posters illustrating all the diseases which cause high mortality in the Province are exhibited, and the means of preventing them demonstrated. The Burma Branch sent out a travelling Red Cross health exhibition in the " bazaar special " train organized by the Burma Railways, which proved a great success. Substantial progress has been made in recent years with " Junior " Red Cross work, which consists mainly of encouraging health education in schools, and there are now 1,953 school groups in the Punjab, the United Provinces, Madras, Bombay, Sind, and Delhi, with a total membership of 84,000. The Junior Red Cross Branches provide books and school fees for poor students, carry on a vigorous campaign against disease, and incidentally, also, assist in the campaigns organized by the Agricultural Departments and other agencies for the destruction of locusts. One of the most satisfactory results of Junior Red Cross work has been the increasing interest taken by the general public in the medical inspection of schools. Another important activity of the Society is to undertake and organize relief operations when serious disasters occur, such as that caused by the bursting of the Shyok Dam during the period covered by our previous Report. During 1930-31 the Society rendered great assistance to those reduced to homelessness and destitution by the great earthquake in Burma in May. The damage it caused in the towns of Pegu and Rangoon,—as we shall see in the next Chapter, was particularly severe. The Burma Branch of the Red Cross took immediate steps to provide relief, and contributed Rs. 5,000 to the special Fund started by H. E. the Governor; central headquarters promptly sent another Rs. 5,000, and the provincial

branches, in response to an appeal, contributed as much as Rs. 14,503. Most of the money was spent in providing food and clothing, and erecting huts and temporary refuges for the homeless. During the year under review the Society was entrusted by H. E. the Viceroy with the administration of the King George Thanksgiving Fund, which had been raised to commemorate His Majesty's recovery from his illness, and which it was decided should be used for conducting an anti-tuberculosis campaign. The sum of Rs. 9,54,724,—the proceeds of the subscriptions,—was accordingly invested, and the annual income will be used to start educational activities designed to attract public attention to the dangers of tuberculosis and suggest means of dealing with the menace. Two useful organizations which work in close co-operation with the Indian Red Cross Society are the St. John Ambulance Association and the " St. John Ambulance Brigade Overseas within the Empire of India ". The former is a teaching body, whose main function is to hold courses for instruction in first aid, home nursing, hygiene and sanitation, and to issue certificates after examination. During 1930, 1,834 courses were held in the subjects mentioned and 28,797 persons received instruction. The classes were organized among railwaymen, miners, soldiers, the police, in all types of educational institutions, in industrial establishments, and in prisons. The St. John Ambulance Brigade Overseas is a uniformed, disciplined body of ambulance workers who place their services at the disposal of the public in any emergency and perform duty in places where accidents are liable to occur; its activities are organized regionally in four " districts " whose headquarters are at Lahore, Calcutta, Bombay and Madras. Each of these districts is composed of a number of ambulance and nursing divisions, and the total strength of the Brigade in India now consists of 1,322 ambulance and 315 nursing members. Among the ambulance divisions are railway and college divisions and labour divisions in mills; the nursing divisions enrol both European and Indian members. During the year under review the Bombay divisions, in particular, performed many arduous public duties in emergencies arising out of the Civil Disobedience Movement, being called upon to turn out on no less than 135 occasions, during which 356 persons were removed to hospital, and 1,058 causes of injury were treated. In addition to these special duties, all brigade divisions in normal times place members on duty at district fairs

and athletic competitions, and on excursion trains. Before concluding our account of the events connected with the Red Cross we must not omit to mention what was perhaps the most outstanding occurrence in its history in India, namely the opening on the 6th of February 1931, of the splendid new headquarters building in New Delhi, which has been erected through the generosity of H. H. the Nawab of Junagadh. In addition to housing the Red Cross Headquarters staff, this structure accommodates the secretariats of the St. John Ambulance Association and Brigade, the Countess of Dufferin's Fund and the Women's Medical Service, the Lady Minto Indian Nursing Association, the British Empire Leprosy Relief Association and the All-India Girl Guides Association. It will undoubtedly be of great public utility, and has already filled a long-felt want.

Before we proceed to consider the various other non-provincial activities with which the Government is associated for improving the material or mental well-being of the people, there is one other voluntary undertaking which requires mention, namely, the All-India Women's Conferences for educational and social reform, whose achievements were first mentioned in these annual Reports in our issue for 1929-30. Since 1926, when the earliest of the Conferences was held, their promoters have built up a large, responsible, and well co-ordinated organization for expressing the opinion of the women of India on the more important matters affecting their welfare. At the outset, the Conferences were devoted to educational questions only, but the scope of their work rapidly widened, and the organization is now subdivided into an educational and a social section, each with its own secretary who works in co-operation with the general organizing secretary. The educational section concerns itself mainly with primary education, and has rendered useful assistance not only to the constituted educational authorities in this particular direction, but also by propaganda in favour of the spread of education of all kinds; school-visiting committees have been formed in many of the " constituencies ", and frequent representations for improvement of educational facilities are made to the authorities, which have already,—as will be realized from reference to the annual reports of the Conferences,—produced some noteworthy practical results. The social section has concerned itself primarily with the issues arising out

of the Sarda Act and the Age of Consent Bill; indeed the members of the Conferences themselves claim a large share of the credit for the introduction of the Sarda Act, since one of the features of the first meeting of the Conference at Poona in 1926 was the passage of a resolution demanding the introduction of legislation to fix the minimum age of marriage. This section is also doing very valuable work by focussing public attention on such problems as the evils that result from the institution of *purdah*, the circumstances of female industrial employees, the defects of the laws of inheritance, the possibility of introducing legislation for divorce, the reform of prisons, and the necessity for reducing both commercial and religious prostitution. Unquestionably the activities of the Conferences are of great public importance, since it is only as a result of the creation of a more enlightened public opinion that the numerous defects,—according to modern "Western" standards,—in the structure of Indian society can be removed, or that legislation against them can become effective; and voluntary organizations of the type of the All-India Women's Conferences are in a position to foster an improvement in the public attitude in these matters in many ways in which the Government itself is not. An important off-shoot of the main organization is the body known as the All-India Women's Education Fund, which was founded in 1929 with the object of supplementing the educational facilities provided for women and girls by the central and provincial Governments. At the outset it was intended that the proceeds of the Fund should in particular be devoted to increasing the supply of trained teachers,—especially those qualified to instruct in domestic subjects,—to providing suitable education in rural areas, procuring decent housing accommodation for village teachers, and encouraging the production of better vernacular text-books. The first president of the new organization was H. E. Lady Irwin, and at the annual meeting held in January 1931 it was decided that an appeal should be made for funds to finance the construction and maintenance of a large new central College for women in New Delhi, in accordance with the recommendations made by a special committee which had been working on the project since the previous August. The institution, as planned, would consist of a school, in which the life of the Indian child would be studied with the object of evolving the method of education most suited

to Indian psychology and Indian conditions, and facilities would be provided for Indian girls to take courses in "home science" for which diplomas would be granted; special training courses for teachers would also be given in a wide variety of subjects, with the object of developing a new attitude towards female education, and as the work expanded the intention would be to establish subsidiary schools in rural areas throughout the country. By the time Lady Irwin left India the financial response to the appeal had already been substantial, and when the next of our annual Reports is issued it seems likely that we shall be able to describe the plans for the construction and organization of the new institution in considerable detail. At the conclusion of the period under review negotiations were in progress for acquiring a temporary home for the college.

Some space must now be devoted to considering the development of "physical education" in India. During the period under review the Government of India received replies from the provincial Governments to an enquiry it had initiated into the subject of providing compulsory physical training in educational institutions for Indian students between the ages of 12 and 20. The enquiry originally arose out of a resolution on the matter adopted by the Legislative Assembly in February 1929. From the information thus obtained,—as well as from the ordinary annual educational reports issued by the provincial Governments,— it appears that this particular subject has lately been receiving a much greater amount of attention from the authorities, and that compulsion has now been introduced in many institutions. As regards the areas under the direct control of the Government of India, certain schemes have now been prepared and are being examined by the Central authorities; but until some improvement takes place in the Government's financial position, it is unlikely that any additional funds will be devoted to the purpose. Nevertheless it is certainly a fact that the demand for the introduction of compulsory physical training in educational establishments of every kind throughout the country is growing in strength and volume every year, and seems likely to continue doing so. In many of the primary and secondary schools where compulsion has been adopted the work has now emerged from the stage of indiscriminate "physical jerks" for all,—regardless of age, sex, or condition,—to that in

which scientific attention is given to the bodily, mental, and social conditions of the individual child. In most Universities and Colleges, physical training is still largely voluntary, but in some the subject is now recognized and has begun to be directed by the authorities. Throughout the world as a whole the achievements of particular Indian athletes are now widely known, and the growth of enthusiasm for various games,—particularly cricket, tennis, football, and hockey,—in schools and colleges has recently been very impressive; the standard of performance moreover is often very high.

It must however be borne in mind that the movement for physical education extends far beyond the scope of such educational institutions as affect only the school-going population. The "public playground movement", for instance, which has been initiated in several of the larger cities, has already become influential and important, and in Calcutta, Madras and Bombay the Municipalities have reserved open spaces to which hundreds of young people resort daily for physical culture and are provided with trained leaders and special equipment. Another striking and significant change has been the rapid increase throughout the whole country in the number of voluntary sports clubs, and in the quantity of spectators who are attracted by the competitions organized by the club members. As regards leadership, without which no general movement for physical culture can hope to develop satisfactorily, it is gratifying to note that this, even at such an early stage, is not lacking. Probably the most successful and important institution for training leaders in physical culture is the National Y.M.C.A. School of Physical Education in Madras, whose students are recruited from all parts of India. Its courses of instruction have obtained definite recognition not only from Madras, but also from other Provinces of British India and from some Indian States, and students are officially deputed to it from most of these places; graduates from the school are in great demand from the numerous educational institutions, municipal playgrounds and welfare organizations that require directors or instructors in physical training. Finally, mention must be made of the Boy Scout and Girl Guide Movements, which have shown a remarkable and gratifying development in India during the last decade or so. Some idea of the popularity and achievements of these organizations can be obtained from the annual

reviews of education issued by the Educational Commissioner with the Government of India,—the latest of which, at the time of writing, related to the year 1928-29. During that period, the Boy Scout and Girl Guides Associations in practically every Province were reported to have done well. In the Bombay Presidency the number of scouts of all ranks exceeded 28,000, and there were 11 more local associations than during the previous year, the total amounting to 138. Most of the new associations formed were in rural areas. As in 1927-28, the provincial Government assisted the Boy Scout Associations in the Presidency with a grant of Rs. 40,000. In the United Provinces, the Seva Samiti and Baden-Powell Associations again progressed satisfactorily, and between them had a total enrolment of about 24,000 scouts. A large number of successful training camps were held. Each association obtained a grant of Rs. 12,000 from the provincial Government, and in addition the Girl Guides Association,—which also had a satisfactory year,—was granted Rs. 5,000. In the Central Provinces, the Boy Scouts Association reported a year of remarkable activity, the enrolments of scouts of all ranks having increased from 13,428 to 20,159. The director, writing of the social work done by the scouts, said they had been "particularly useful in guarding bridges where dense masses of people were crossing, in acting as life-saving guards on the *ghats*, in looking after lost children, rendering first aid, and helping the police with heavy traffic". In the Madras Presidency, during 1928-29, there were 600 boy scout units with a total strength of 13,000, and the Director of Public Instruction reported that besides the increase in numbers there had also been a substantial increase in efficiency, as was indicated by the large number of proficiency badges won by the various units at rallies and competitions. In several other Provinces also,—particularly the Punjab, Assam, and the North-West Frontier Province,—considerable progress was made. For the period actually covered by this Report,—namely the year 1930-31,—detailed information concerning the number and strength of the Boy Scout units in the various Provinces is not available; but despite the difficulties of the year, and the fact that Boy Scout organizations in India are tending to experience considerable opposition from "Youth Leagues" and other nationalist bodies,—on the ground that they are instruments of "British Imperialism",—it was nevertheless reported in general

that the year was a satisfactory one for the Boy Scout Movement, and that substantial progress was made both from the point of view of numbers and of adherence to scout methods and scout ideals. A feature of the year was the large number of camps which were held by scout troops in villages; and it is stated that the spirit of comradeship and discipline which prevailed in every one of these camps was responsible for obtaining the good-will of the masses for the Boy Scout Movement and bringing home to the rural population what scouting in real life means. An event which deserves record was that an All-India boy scout contingent was sent to the World Jamboree held at Arrowe Park, Birkenhead, England, during the year. Several Indian States also sent representatives. The impression created by the Indian contingents on the British public was apparently excellent.

We must now describe such noteworthy events as occurred during the year in connection with the various educational institutions for which the Government of India assumes some degree of responsibility, which were enumerated in the first paragraph of this Chapter. Of these, the three Universities of Aligarh, Benares, and Delhi are the most important, and since Benares is the oldest, it should be considered first. This institution, and Aligarh, are the only specifically denominational Universities in India,—the one being intended primarily for Hindu and the other for Muhammadan students; there are, however, no rules in either of them against the admission of students of other communities. The foundation of Benares represented an important stage in the development of higher education in India, since it was the first of the Indian Universities to be established on a unitary basis,—that is to say, to have no geographically distant colleges under the control of the central institution,—and to recognize the distinction between administrative and academic functions, entrusting the management of each to a separate body. In these respects, it forestalled the recommendations of the Calcutta University Commission. The Benares Hindu University Act was passed in October, 1915, and came into operation in the following April. The University actually started work in October, 1917, with the Central Hindu College,—which had been founded in 1898,—as its nucleus.

The objects of the University are to promote the study of the Hindu shastras and of Sanskrit literature in order to preserve and

popularize the best thought and culture of the Hindus; to promote learning and research in arts and science of all kinds; to advance and diffuse such scientific, technical and professional knowledge, combined with the necessary practical training, as is best calculated to promote indigenous industries and develop the material resources of the country; and to build up the character of Indian youth by making religion and ethics an integral part of education. The Court and the Senate are the bodies in charge of the administrative and academic functions of the University respectively, the Council being the executive of the Court and the Syndicate that of the Senate. Appointments to the posts of Chancellor and Vice-Chancellor are made through election by the Court; this body,—the supreme authority in the University,—consists entirely of Hindus, and includes all donors of Rs. 10,000 and upwards, together with 30 members elected by those who have subscribed Rs. 500 or more; it also contains 15 representatives of Hindu religion and Sanskrit learning, 10 representatives of the Sikh and Jain religions, 10 representatives elected by registered graduates of the University, 10 persons elected by the Senate, and 10 persons representing the learned professions. The Senate consists of the heads of colleges, University professors, 10 representatives of the members of the teaching staff, 5 representatives of Hindu religion and Sanskrit learning, 5 representatives elected by registered graduates, and 5 members nominated by H. E. the Governor of the United Provinces, who is *ex-officio* Visitor of the University. All academic control relating to such matters as the framing of courses, inspection, examinations, general discipline, the conferment of degrees, the organisation of the faculties, and the award of fellowships is vested in the Senate. Although the University bears a denominational name it is as we have mentioned nevertheless open, subject to the regulations, to persons of all classes, castes, and creeds, and of both sexes. Religious instruction is compulsory for Hindu students only. The institution may, therefore, be said to be catholic in spirit and outlook.

The University is placed on an excellent site, two square miles in extent, and the buildings, most of which are constructed in the traditional Hindu style of architecture, are large and impressive. The students are housed in hostels clustered in a semi-circle round the colleges and laboratories, and the teaching staff is accommodated

in residential quarters nearby. Libraries and reading rooms are amply provided. The ideal of the University is that students and teachers should be members of one home,—a veritable Ashram,—participating in a common corporate life in which sound literary, scientific, and technical education is provided in a healthy and intellectual environment. During the thirteen years that have elapsed since the institution started work, it has established 32 departments of learning, erected 175 buildings, collected over 60,000 volumes in its library, and provided equipment in its dozen laboratories and workshops costing over Rs. 25 lakhs. The number of scholarships awarded amounts to 400, and over 600 free and half-free studentships are granted to poor and deserving students. Free education is given to the students in the Colleges of Theology and Oriental Learning, and to the woman students in the Arts and Science colleges. Extensive play-grounds have been provided, and also a stadium, a gymnasium, an armoury of 300 rifles for the University Training Corps, a hospital with accommodation for a hundred indoor patients, a botanical garden, and a pharmacy of Ayurvedic medicines.

The total number of students on the rolls on the 31st of March, 1931, was 2,419, of whom 48 were ladies. 1,600 of the students were accommodated in the hostels. The Central Hindu College (Arts and Science) had 1,385 students; the Law College 45; the Engineering College 461; the Department of Mining and Metallurgy 47; the College of Oriental Learning 178; the College of Theology 19; the College of Ayurvedic Medicine 186; the Women's College 48; and the Teachers' Training College 50.

Various changes in the staff that are worthy of mention took place during the year. Dr. A. S. Altekar, M.A., D.Litt., was appointed Manindra Chandra Nandy Professor of Ancient Indian History and Culture, in place of Professor R. D. Banerjee, deceased. Professor H. P. Philpot, B.Sc., A.M.I.C.E., A.M.I.M.E., M.I.A.S., was appointed Patiala Professor of Mechanical and Electrical Engineering in place of Mr. J. Riffkin, who left to join the Bengal Engineering College, Shibpur. Dr. B. Darsannacharya, M.A., Ph.D., was appointed Professor of Physics in place of Dr. N. K. Sethi, who resigned to join the staff of the Agra College. In addition, the teaching staff was strengthened by the appointment of Dr. Rajnath, M.Sc., Ph.D., as assistant professor of Palæontology

in the Department of Geology, and by the appointment of three Assistant Professors in the Engineering College, and one each in the Departments of Political Science and Physics. The staff of the Physics Department was further strengthened by the appointment of a Demonstrator. As regards research work, the most important events were the completion of two theses, one by Dr. A. S. Altekar on "The Rashtrakutas and Their Times", and the other by Mr. Mathuralal Sharma entitled "History of Indian Magical Beliefs and Superstitions"; both were approved by the examiners.

The Annual Meeting of the University Court was held on the 21st of December, 1930. H. H. Maharaja Dr. Sir Prabhu Narain Singh Bahadur, G.C.I.E., G.C.S.I., LL.D., was re-elected Pro-Chancellor of the University; the Hon'ble Raja Sir Moti Chand, Kt., C.I.E., was re-elected Treasurer. Certain statutes consequent on the amendment of the Benares Hindu University Act by Act XXIX of 1930 were considered and passed. The Convocation of the University was held on the 23rd of January, 1931. The Vice-Chancellor presided. One student was admitted to the D.Litt. Degree. Amongst the other students who obtained degrees were eight ladies who were given the B.A. Degree, and two who were given the M.A. Degree.

Since the University was founded, subscriptions and donations amounting to Rs. 1,69,38,704 have been promised, of which Rs. 1,29,22,553 were collected by the 31st of March, 1930. In addition to this, the institution possesses land and house property and annuities given by Ruling Princes, which brings the total value of its assets, including the capitalized value of the property and annuities, up to Rs. 2,66,40,000. When the still unrealized donations and subscriptions totalling Rs. 40,16,350 have been collected, the finances of the University should be placed on a permanently satisfactory footing. The whole of the Government of India's annual recurring grant of Rs. 3 lakhs and the non-recurring grant of Rs. 6 lakhs, which was due in the year, was received in March, 1931. The third instalment of Rs. 6 lakhs of the total non-recurring grant of Rs. 15 lakhs is due in 1931-32. A sum of Rs. 52,000 was received during the year from the Jain Swetambar Conference in Bombay for the endowment of a Chair in Jain Logic and Philosophy. The University Council has recently instituted a Chancellor's Medal to be awarded annually to the student who passes in the First Divi-

sion and secures the highest percentage of marks at the M.A. and M.Sc. Examination; the medal for 1930 was awarded to Mr. H. R. Krishnan, a student of the Department of Chemistry. Another event of the year was the interesting course of twelve lectures delivered at the University by Professor G. S. Mahajani, M.A., Ph.D., Principal of the Fergusson College, Poona, and Honorary University Professor of Mathematics at Benares.

Owing to persistent picketing by the local Congress volunteers, teaching in the University was interrupted for about five weeks of the year. A certain number of students and two teachers left the University and took part in the Civil Disobedience Movement. But after the Dusehra vacation, the normal work of the University was resumed and continued regularly for the remainder of the period under review.

The Mohammadan Anglo-Oriental College at Aligarh,—the nucleus of what is now Aligarh Muslim University,—was founded in 1875, with the object of providing Mussalman boys with an education which would enable them to retain their traditional Islamic culture while at the same time fitting them to compete more successfully with other Indians in the altered conditions of modern life. The driving force behind the movement which brought the college into existence was Sir Syed Ahmad,—perhaps the most eminent Mussalman whom India produced during the XIX century. The institution, however, neither was nor is devoted exclusively to the education of Muslims, and amongst its students have been several Hindus, Christians, and Parsis; actually the first graduate of the College was a Hindu. From the very beginning, great importance was attached to developing the institution on residential lines, and Aligarh can probably claim to have been the first educational establishment in India in which students coming from different and distant parts of the country, with different habits and traditions, lived together under a system analogous to that prevailing in the older Universities of Great Britain. The success of the movement rapidly attracted the attention of the authorities, and Sir Auckland Colvin in 1892 paid a public tribute to the type of man that was being turned out from Aligarh. By 1898, when Sir Syed Ahmad died, he had the satisfaction of knowing that the college which for many years he had made his home had become the centre of an important and progressive cultural movement, and that the

foundation of his scheme has been successfully laid. After his death the community felt that some memorial must be raised to perpetuate his name, and that the most appropriate means of doing so was to work for the conversion of the college of which he may truly be said to have been the founder into a University. This ideal was realized in December, 1920, when the Aligarh Muslim University Act came into force. The University has hitherto consisted of three main institutions, namely, the University itself, the Intermediate College, and the University School, but as we shall explain in a moment, new arrangements are likely to be made with regard to the Intermediate College during 1932. In addition to these institutions there is also the Muslim University City School, the Tibbiya College for instruction in the Unani system of medicine, and the Training College.

The main governing body of the University is the Court, to which only a Muslim can belong. The foundation members of the University represent the old trustees of the Mohammadan Anglo-Oriental College and are members of the Court, which also contains representatives elected by the Court, and others nominated by Mussalman States and elected by the Academic Council, the Donors, and the Registered Graduates. The offices of Lord Rector and Chancellor of the University are held respectively by H. E. the Viceroy and H. H. the Nawab of Bhopal; the Visiting Board consists of seven members, of whom the Chairman is H. E. the Governor of the United Provinces. The immediate administration of the University is vested in the Executive Council of three members, namely, the Vice-Chancellor, the Pro-Vice-Chancellor, and the Treasurer. The Academic Council is the normal authority in matters of discipline, courses of studies, and examinations; it also exercises the usual control exerted by the Senate in other Universities.

Being only about eighty miles from Delhi, the geographical position of the University is a convenient one. The actual site is a mile and a half from the town of Aligarh. The buildings are constructed in the traditional Islamic style and consist mainly of two large and imposing quadrangles. In recent years the demand for residential accommodation has greatly increased, and by 1932 it is probable that there will be three Halls in existence. Each Hall consists of blocks of boarding houses accommodating between

250 and 350 students, and resembles in some respects a college at Oxford or Cambridge. It has been the policy of the University authorities not to consider mere numerical strength a criterion of progress and success, since the history of the Indian University movement provides many instances of the unfortunate consequences that ensue from inflating the number of students. The real test is the type of man turned out and the way he reacts to the social, political and economic problems of his day; and the Muslim University can legitimately claim that it is on the whole producing the type of man that its founder hoped to see. Despite the unrest which during the last decade or so has infected some of the Universities of India, and caused students to defy their teachers and parents and abandon their studies in order to take part in political activities, the students of Aligarh have followed the advice of the leaders of their community, and maintained their discipline and traditions.

During the year under review the University suffered two severe personal misfortunes in the deaths of the Chancellor, H. H. the Begum Sahiba of Bhopal,—to whose beneficence and wisdom the University will always be indebted,—and of Mr. E. A. Horne, the Pro-Vice-Chancellor, who had held his office for less than a year, and whose illness was brought on by over-work in the service of the University. The absence of the Vice-Chancellor, who had been sent to Europe under doctor's orders for part of the year, added to the administrative difficulties of the period under review, but the efforts of the Hon'ble Sir Shah Muhammad Sulaiman and other leading Muslim educationists and public men enabled them in large measure to be overcome. H. E. H. the Nizam of Hyderabad munificently provided for the creation of chairs both in Chemistry and Physics at the University, at a cost of Rs. 10 lakhs; and in addition, the annual grant by the Hyderabad Government was increased from Rs. 36,000 to Rs. 60,000. Moreover, H. H. the Nawab of Bahawalpur commemorated H. E. the Viceroy's visit to Aligarh by making a donation of Rs. 1 lakh. It will be seen therefore that on this, as on previous occasions, the University has had generous support from the leading Mussalman princes. In addition to the visit paid to the University by H. E. the Viceroy and Lady Irwin, many other important people, including H. H. the Nawab of Bahawalpur, and Dr. Lindsay, the Master of Balliol, came to see the institution. The new period chosen for the long vacation, in order to synchronize

the activities of Aligarh with those of other Universities in the United Provinces, was found to be unsatisfactory owing to the severe outbreaks of malaria that occurred, and arrangements have accordingly had to be made to revert to the old system whereby the University remains closed during the very unhealthy months of July, August and September. One of the most gratifying features of what was in many respects a difficult year was the refusal of the students to allow their work to be disturbed by the events connected with the Civil Disobedience Movement.

Generally speaking, the various teaching departments all made satisfactory progress during the year. An interesting development took place in connection with the Department of Education and the Training College associated with it,—consisting in a grant of Rs. 6,000 per annum made by the Government of the United Provinces, to be devoted to the award of scholarships to students undergoing training for the B.T. degree; the Training College has been very well housed in a building specially designed for it and should prove one of the best of its kind in India; very satisfactory reports upon its progress have been made by the Government inspectors who have visited it. After the death of Mr. Horne, the duties of Pro-Vice-Chancellor were temporarily undertaken by Mr. Henry Martin, M.A., O.B.E., the Principal of Islamia College, Peshawar; and in January, 1931, Mr. R. B. Ramsbotham, M.A., D.Litt., M.B.E., F.R.H.S., I.E.S., was appointed, with the concurrence of the Government of Bengal, as Mr. Horne's permanent successor. Dr. R. F. Hunter, D.Sc., Ph.D., D.I.C., A.R.C.S., A.I.C., was appointed to the newly created Nizam Chair of Chemistry during the year, and Dr. Rudolf Samuel, Ph.D., of Breslau University, to that of Physics. Other new appointments included those of Dr. A. R. Mansoor, M.D., D.P.H., who was made whole-time Medical Officer to the University, and of Mr. G. C. Woods, B.A., who became headmaster of the Muslim University School. In addition, the Government of the United Provinces kindly lent for three years the services of Dr. I. R. Khan, Ph.D., to re-organise the Geography Department. According to arrangements made some time ago, the Intermediate College attached to the University will have to be re-organized in 1932; and preliminary arrangements for this are already being made. At present the idea is that this College shall be abolished, its two senior classes being absorbed in the University

proper and its two junior classes being attached to the University School. The latter institution has made rapid progress in recent years; manual training has been successfully introduced into the curriculum, and exhibits are regularly sent to the annual fair at Aligarh; educational tours to local factories and similar establishments are also undertaken from time to time under the guidance of teachers. Satisfactory developments have also occurred in athletics, and several playing fields have recently been added to the school grounds. The Muslim University City High School had the misfortune to lose its head master, Mr. Syed Azizul Hasan, during the year, to whose work it owes a great deal. It has only recently been raised to the status of a high school and placed in new buildings, and the University has now become entirely responsible for its management.

As regards the University Medical Department, the event of the year was the separation of the posts of the Principal of the Tibbiya College and Medical Officer to the University, as the combined duties were proving too onerous for one officer to undertake. Dr. Butt assumed the exclusive charge of the Tibbiya College, which is sure to benefit substantially from the appointment of a whole-time Principal. It is, however, still in great need of better and larger buildings, the existing structure being distinctly cramped and in other ways somewhat unsuitable. As regards the new post of whole-time Medical Officer to the University, this, as we have seen, has been filled by the appointment of Dr. Mansoor, M.D., D.P.H. The construction of larger and more suitable buildings for the Tibbiya College has been under consideration, but the general financial stringency has prevented any work in this direction from being actually taken in hand.

As was to be expected, the steady expansion of the University has necessitated very heavy expenditure, which is being met partly from the contributions made by the Government of India. Large blocks of laboratories, planned in accordance with the latest modern requirements, have now been designed for the Chemistry, Physics, Zoology and Botany Departments, and should provide the University with housing and equipment for scientific studies which will be unsurpassed in India. This is a very gratifying development, for the Muslim community as a whole has hitherto been somewhat deficient in scientific knowledge and training. The Uni-

versity, however, still feels the want of an Electrical Engineering Department, which it has not the financial resources to establish; but it is hoped that the Muslim community as a whole will soon furnish the necessary assistance, in order that Muslim boys may have the opportunity of obtaining training in what is now a very important branch of modern industry. During the year under review all the University buildings were provided with electric current. The sanitary system has also been reorganized. Climatically the University is somewhat unfavourably circumstanced; the unhealthiness of the district and the difficulty of providing satisfactory drainage necessitates, as we have seen, the complete closing down of the institution during July, August, and September; all other Indian Universities except one are able to remain open during this period and thereby to arrange their working terms more conveniently.

The usual social and athletic activities of the University were successfully continued during the year. The most important University Society is the Union, which shows no sign of losing its vigour or popularity. During the current year it has exercised a valuable influence in directing the opinion of the students in matters of difficulty. Amongst those who addressed the Society have been Begum Sahiba Shah Nawaz, Mr. Shaukat Ali, and Mr. T. K. Sherwani. The various other societies, in which practically every Department is represented, continued to function satisfactorily, and the University had several successes in athletics, particularly in tennis. Special mention should be made of the activities of the University Training Corps, because it was from the two Aligarh University platoons that the team which won the A.R.A. competition open to the University Training Corps and Territorial Units of the whole of India and Burma was exclusively drawn. The number of students in the University proper during the year was 641; in the Intermediate College there were 601 students, in the University School 285, in the Tibbiya College 44, in the Muslim University School 291, and in the Training College 52.

Delhi University was founded in 1922 with the object of providing better facilities for higher education in India's capital city. This institution is the only non-denominational University under the direct control of the Government of India. H. E. the Viceroy is Chancellor; he appoints the principal officers of the University

and nominates 15 members to the Court, 2 members to the Executive Council and 3 members to the Academic Council. All the statutes and ordinances framed by the University authorities are subject to the assent or veto of the Governor General in Council. The Court consists of various *ex-officio* members,—including the chief University officers, the principals of the Colleges, professors and readers of the University,—a certain number of members elected by the Registered Graduates, representatives of the Council of State, the Legislative Assembly, and the governing bodies of the colleges in Delhi, and 15 members nominated by the Chancellor. It is primarily a legislative and supervisory body. The Executive Council consists of 21 members, 7 of whom are the principals of the colleges; of the remainder, 5 are elected by the Court, 2 are elected by the Academic Council, 2 are nominated by the Chancellor; and the Vice-Chancellor, the Rector and Superintendent of Education in Delhi, Ajmer-Merwara, and Central India, and the Deans of Faculties are *ex-officio* members. The Council exercises control over the finances and to some extent over the academic administration of the University. The Academic Council consists at present of 35 members,—the Vice-Chancellor, the Rector, 3 Deans of Faculties, 7 Principals of Colleges, 1 Professor, 21 Readers, the Librarian, 3 persons who are not teachers nominated by the Chancellor, and 3 University teachers co-opted by the Academic Council. It controls and regulates the standards of instruction, and is responsible for the University examinations.

When the University was founded, there were only three colleges in Delhi. During the nine subsequent years, the number of colleges has gradually increased to seven, among them being a college for women and a college with special facilities for teaching commercial subjects. The total number of students in the University, which was 603 in 1921, now amounts to over 1,700. A new Faculty of Law, organised entirely by the University proper, has been added to the two original Faculties of Arts and Science. In the Faculty of Arts, where instruction is imparted chiefly by the constituent colleges, the University has appointed a Reader in Economics and a part-time Reader in Philosophy to supplement the teaching. In the Faculty of Science, the University has undertaken the teaching of Physics and Chemistry for the B.Sc. classes and maintains for the purpose two laboratories and a staff of teachers. A fair start

has been made in establishing a suitable University Library, the number of volumes acquired being now over 11,300. B.A. Honours Courses, as distinct from the Pass Courses, have been instituted in most of the Arts subjects; only students of comparatively high educational promise are admitted to them. The colleges have recently strengthened their staffs by fresh appointments of highly qualified and experienced teachers; the total number of recognised and appointed teachers is now about 100, of whom 20 are graduates of Oxford or Cambridge and 5 of other British or European Universities. The striking improvement that has taken place in the general standard of educational aspiration and achievement is well illustrated by the fact that the number of B.A. Honours and Post-graduate students has risen from 30 in 1922 to 160 in recent years. Considerable progress has also occurred in female education. The Indraprastha Girls' High School was converted into an Intermediate College in 1924 with only 5 students in the post-matriuclation classes; during the year under review the number rose to 29. In addition, there were 15 women students enrolled in the B.A. and M.A. classes in the men's colleges.

As regards the physical and social welfare of the students the University authorities have also not been inactive. A University sports tournament is organized and held every year in the months of January and February. A University Training Corps was formed in 1924, and became so popular and attracted so large a number of fresh entrants that the original company was expanded into a battalion in 1927. Several members of the teaching staff have been appointed officers and under-officers in the Corps. Its strength on the 30th of September, 1930, was 6 officers and 200 other ranks.

The Pro-Chancellorship of the University was resigned during the year by the Hon'ble Khan Bahadur Dr. Sir Muhammad Habibullah on the expiry of his term of office as member of the Viceroy's Executive Council, and the Hon'ble Mian Sir Fazl-i-Husain was appointed in his place. A regrettable event was the death of Rai Bahadur Dr. Sir Moti Sagar, the Vice-Chancellor, on the 10th of November 1930; the post was subsequently filled by the appointment of Khan Bahadur Muhammad Abdur Rahman, B.A., LL.B., a leading Advocate of Delhi and the Dean of the Faculty of Law. During the year the Commercial Intermediate College applied to

the University for permission to open degree classes, and the proposal was approved by the University Court. At the time of writing, however, the assent of the Governor General in Council to the scheme had not yet been obtained. If it is granted, the College will be allowed to teach up to the B.A. Pass standard in certain specific subjects including Commerce. Among the endowments received by the University during the year was a sum of Rs. 900 for a prize called the "Hiralal Bhargava Prize" to be awarded annually to the best Bhargava student in the University, and another sum of Rs. 1,000 for a gold medal in memory of the late Pandit Raghubar Dayal, Principal of the Sanatan Dharam College at Lahore, to be awarded annually to the best student in Sanskrit in the M.A. or B.A. Honours examination. By far the most important donation, however, was that of Government Promissory Notes to the face value of Rs. 34,000, bearing interest at 3½ per cent., received through H. E. the Viceroy from Mr. (now Sir) Kikabhai Premchand of Bombay, representing the allowances he had received as a member of the Legislative Assembly and of the Indian Central Committee, which he wished should be devoted to the establishment of a part-time Readership in Economics at the University. This Readership has now been created, and the holder of the appointment will be required to deliver a single course of at least ten lectures on a subject selected by the University,—the income accruing from the endowment, amounting to Rs. 1,200, being paid to him as remuneration. The University will have the right to publish the lectures.

Stringent measures were taken during the year to reduce expenditure as much as possible and to raise more income from fees and other sources. The full effect of this action will be noticed only during the year 1931-32; but the financial year 1930-31 closed with an improved cash balance. Mention has been made in previous Reports of the Delhi University Enquiry Committee, which was appointed in 1927. Unfortunately, owing to financial and other difficulties, the Government has not yet been able to reach any decision on the Committee's report. In August 1930, the Secretary to the Department of Education, Health and Lands, and the Educational Commissioner with the Government of India, had informal conversations with representatives of the University and its constituent colleges, and formulated a scheme regarding the

future organization of the institution, and the project of accommodating it in the buildings on the old Viceregal Lodge Estate, which was submitted to the Government for consideration. While unable as yet to come to any definite conclusion on the various points at issue, the Government of India have sanctioned, as a temporary measure, the continuance of the special grant of Rs. 25,000 for the years 1931-32 and 1932-33 in addition to the normal recurring grant of Rs. 75,000, so as to enable the University to meet its existing liabilities and commitments. In addition, they have also agreed to place suitable buildings and grounds in the old Viceregal Lodge Estate temporarily at the disposal of the University. The Civil Disobedience Movement had no serious effect on the educational activities of the University during the year. In spite of picketing by Congress volunteers, and other local disturbances, the University and the colleges succeeded in maintaining discipline and the normal work continued practically uninterrupted.

As regards the other educational matters with which the Government of India is concerned, a number of minor events took place during the year which deserve mention. First we must describe the developments which occurred in connection with the three subjects dealt with in the last paragraph of Chapter VIII of our previous Report. During the year treated in that volume the Governments of Madras, Bihar and Orissa, the Central Provinces, and Burma submitted to the Government of India the detailed schemes which they had been requested in 1927 to draw up concerning the organization of their new superior educational services. These services, it will be recollected, had to be created as a result of the decision reached in connection with the introduction of the Montagu-Chelmsford Reforms that the administration of education,—except for the matters enumerated at the beginning of this Chapter,—should thenceforward be undertaken not by the Central but by the provincial Governments, and that recruitment to the Indian Educational Service should accordingly cease. During the year under review schemes were also received from the Governments of Bombay and the Punjab, and these, together with those previously submitted, have now all been generally approved. The schemes prepared for the United Provinces and the North-West Frontier Province, however, is still under consideration; and at

the time of writing the schemes for Bengal and Assam had not been received. Another matter referred to in last year's Report was the decision made by the Government of India that a special post of Superintendent of Education should be created for Delhi, Ajmer-Merwara, and Central India, in order that the Educational Commissioner with the Government of India might be relieved of the responsibilities which had hitherto devolved on him in this connection. Unfortunately a variety of causes conspired to prevent the post being filled during the period under review, and the Educational Commissioner continued to carry on the functions pertaining to it; but an appointment was successfully made shortly after the end of the year. The last point mentioned in our previous volume was the appointment, in September 1929, of a Committee to investigate the whole question of primary education in the centrally administered areas. The Committee completed its work towards the end of 1930, and submitted its report to the Government, and the recommendations made in it were still under consideration when the period under review came to a close.

Another matter of some interest which arose during 1930-31 was the recommendation made by the Statutory Commission,—which had previously been put forward also by the auxiliary educational Committee presided over by Sir Philip Hartog,—that the Central Advisory Board of Education and the Indian Bureau of Education should be revived. These bodies, it will be recollected, were abolished in 1923 on the advice of the Indian Retrenchment Committee presided over by Lord Inchcape. But in the light of the comments made in the reports of the Statutory Commission and its Auxiliary Committee, it was felt desirable that the whole question should be taken up by the Government of India anew during the period under review. A scheme for the revival of the Central Advisory Board and the Bureau of Education was accordingly formulated and referred to provincial Governments for consideration.

As we have already indicated earlier in this Chapter, when discussing medical matters, in July 1930, a deputation of residents of the North-West Frontier Province visited the Chief Commissioner to draw his attention to certain disabilities from which they considered the Province to be suffering. They urged, *inter alia*, that the scope of the activities of the beneficent departments such as the Education

Department should be enlarged, and that uplift work,—intellectual, moral, and economic,—should be seriously undertaken in order that the Province might reach, or at any rate approximate towards, the standard prevailing in the Punjab. As a result of these representations the Chief Commissioner, with the concurrence of the Government of India, announced that proposals for 1931-32 would be framed on the basis of securing to the Province, as regards these Departments, the same standards of administration as obtained in the adjacent Punjab Districts. In so far as the Education Department was concerned, it was decided that the Government should begin by framing a programme designed to bring the Province up to the Punjab standard in vernacular education. Accordingly a comprehensive programme covering three years, which was estimated to cost over Rs. 34 lakhs non-recurring and Rs. 12¾ lakhs annually recurring, was drawn up. But as the time for making budgetary provision for the year 1931-32 was very short, and as the financial situation was unfavourable for large expenditure, it was decided to let the present five-year educational programme in the Province, which was introduced in 1927, run its course, and to work out the details of the new programme so as to give effect to it from the 1st of April, 1932, and to provide meanwhile only such additional funds in 1931-32 as were most urgently needed; these were estimated at Rs. 66,000, and the Government of India agreed to provide that sum in the Budget for 1931-32.

At a joint conference of the representatives of the Imperial Secretariat Association, the Attached Offices Association and the Managing Committee of the Harcourt Butler School in Simla, which was held on the 10th of August 1929, a committee was appointed to examine the question whether it would be possible to establish the Harcourt Butler School in Simla as a "moving school",—that is, a school which would move between Simla and New Delhi with the offices of the Government of India. The Committee, after careful consideration, came to the conclusion that the most convenient way of dealing with the problem of providing adequate educational facilities for the sons of the migratory staff of the Government of India would be to adopt an arrangement of this kind. The Government accordingly made a grant-in-aid of Rs. 7,580 for this purpose in 1930-31, and agreed to pay Rs. 4,200 annually in future.

CHAPTER VIII.

The Advancement of Science.

Since we have already devoted a good deal of space to considering the work done under Government auspices in certain of the applied sciences[1], the existence of a Chapter with a title such as this may seem rather odd. The explanation,—or rather part of it,—is to be found in the fact that, besides providing funds and other facilities for the advancement of agricultural and veterinary research, forestry, meteorology, and medicine, the Government also maintains certain special scientific departments known as the Surveys. These are five in number,—each being concerned with one particular branch of science,—and their functions and achievemets deserve more popular attention than they usually receive. At all times the work they undertake is of real intrinsic importance, and frequently of great interest to the general public; and at moments such as this, when acute financial stringency prevails, and endeavours are being made to curtail all activities of the State which cannot be justified solely on administrative grounds, we need make no apology for describing the objects for which the Surveys were established, and the results they have hitherto achieved, in some detail. Apart from this,—and herein lies the additional justification for the existence of this Chapter,—it seems undesirable, in a work which is supposed to deal not only with the "material" but with the "moral" progress of India, to omit all mention of the many interesting intellectual activities which are going on throughout the country and which are in greater or lesser degree beyond the purview of the Government altogether,—far-reaching though its operations are in comparison with that of a country such as England. Unfortunately, for several obvious reasons,—among which the multiplicity of languages in use throughout India is the most cogent,—we cannot yet devote any portion of these annual reports to discussing the very significant movements in the vernacular literatures, philosophy, and history which have recently been developing in various parts of the country;—though were we able to, we would find them a valuable index of the nature and trend of the profound social and political changes which are now in progress. But we are at least in a posi-

[1] *vide* Chapters III, IV, and VII.

tion to devote a few pages to the important scientific investigations which non-official Indian workers have recently undertaken in the various Universities and research centres; and with this the latter part of the Chapter will be concerned.

Of the five Surveys, the Survey of India, which deals mainly with the practical aspects of geographical and geodetic science, is the only one whose purpose is not altogether evident from its title. This organisation however will be treated second, and we will first describe the functions and achievements of the Archæological Survey. A department entrusted with archæological work has actually been in existence for 69 years, but the real history of this Survey dates from the time of Lord Curzon's Viceroyalty. Since then, when it was drastically re-organised and given fresh impetus, the extent of its accomplishment has been remarkable. Not only has it undertaken the investigation, preservation, and repair of a very large number of the splendid monuments and buildings dating back to about the III century B. C. that India was known to possess,—which was the purpose for which it was primarily constituted,—but it has also achieved some epoch-making triumphs in the field of pure research, which have thrown a flood of unexpected light upon the early history of India and the origins of civilization as a whole. The discovery in 1923-24 of material demonstrating that there had been, in the North-Western portion of the country at any rate, a hitherto entirely unsuspected and astonishingly elaborate civilization as long ago as the fourth millenium B. C., aroused intense interest throughout the scientific world, and may truly be said to be one of the most suggestive and important of the many fine achievements of modern archæology.

While no outstanding discoveries were made by the Survey during the year 1930-31, steady progress was maintained in all its activities; and the excavations in progress at Mohenjodaro, Harappa, Taxila, Nalanda, Paharpur, and Nagarjunikonda, the special survey of prehistoric sites which was started during the period covered by our previous Report, and the preservation of the many important historical monuments above ground, have all continued satisfactorily.

We will first consider the progress of the Survey's investigations of the prehistoric remains in the Indus basin. The excavations at Mohenjodaro in Sind have again proved very interesting, not so much from any features of the buildings cleared as from

the number and scientific value of the smaller antiquities that have been unearthed. No less than four hoards of copper were found, consisting of weapons, tools, mirrors, and jars containing beads and other objects, all of which, besides being of considerable intrinsic worth, are of importance for the light they throw on the civilization of this period. Mohenjodaro has produced relatively little copper and bronze hitherto, and the pieces now found will enable the degree of skill in metal-working attained by the people of the Indus Valley to be better gauged. Other objects of special interest that have been found this season are a portion of a measuring scale, and several terracotta sealings bearing unusual scenes which will help in the interpretation of the religious as well as the domestic features of the Indus Valley culture; there are also seals whose subjects are quite unfamiliar and types of weapons hitherto unknown at this site. Most of the buildings cleared during the year are comparatively small houses, but the presence of walls of unusual thickness indicates that beneath some of them are the remains of a building of importance; though what it will prove to be cannot be known until the site has been dug deeper. The middle of one of the mounds has been specially excavated right down to the earliest levels obtainable; and in some parts water has been reached approximately 35 feet from the mound's summit. Among the objects recovered from this deep digging are some of novel type, as for example a theriomorphic jar, which is the first to be found at Mohenjodaro,—though they are known in other, but not earlier, civilizations; many others, however,—some of which were found actually below water-level,—differ in no way from objects found much higher up, which demonstrates that from the top of the mound down to what is now the water-level, and probably a great deal lower still, the civilization of this city was continuous.

At Harappa in the Punjab,—the other important prehistoric site,—the excavation of the cemetery was continued, and the uppermost stratum along the East and West sides of this area yielded more pot-burials, most of them very fragmentary. Among them was a plain unornamented egg-shaped jar with a ring at the bottom, which contained the remains of an embryonic baby. The pottery from the East side of the cemetery in this uppermost stratum differs somewhat from the other; but the various essential items intended to provide for the sustenance of the dead are present in both. The paintings on the burial pottery found this year depict gazelle

heads, rows of peacocks, V-shaped peacock-headed designs, kites, birds, stars and rayed circles. Below this uppermost stratum there is a second stratum of burials, and further excavation in this has revealed fractional burials in the West side of the cemetery and complete burials in the East, some of the latter being however devoid of pottery. In these complete burials the orientation of the bodies and the shape and position of the pottery is unusual. Alongside one of the skeletons were the dismembered remains of an animal, perhaps a sheep, laid out in a line, and one of the ribs was found placed in the dead man's hands,—apparently an indication of animal sacrifice. Among the antiquities found in other parts of this site were some more unicorn seals of steatite, a copper celt, spear heads, an ivory cone, numerous tiny seals and sealings of an earlier date,—of which one is shaped like a fish and another like a Boeotian shield,—a steatite seal depicting a bull, a silver vase in good preservation, a small faience ram, a miniature faience goblet, and a copper rod ornamented on the top with a dog biting the ear of a goat and used for applying antimony to the eyes. Other interesting antiquities were an exceptionally well-executed terracotta monkey clinging with hands and feet to the branch of a tree, a bull's head of shell, and a painted potsherd ornamented with four human figures standing hand in hand between two deer. These figures are beaked and have wavy lines over the head,—features that are also characteristic of two human figures depicted on a burial jar previously found. There were also found a copper bowl, an engraver's tool, another like it with an alabaster handle, two bent copper bangles, a copper razor of a type similar to those used in the Bronze Age in Ireland, more faience sealings embossed with *svastikas*, another seal depicting a Brahmani bull, and many fragments of charred bone or ivory rods and styluses. Two *lingams* with spiral ribbing, and a large board of nearly 700 conical terracotta *lingams*, significant of phallic worship, were also discovered. Well-preserved structural remains discovered at Harappa have so far been few, but among the objects revealed during the year was a brick-on-edge floor, in the centre of which is a large brick-built well, whose lower part is lined with a second ring. The shaft of the inner ring has been traced to a depth of 62 feet, where the masonry is much disturbed. This inner ring would appear to have been inserted to repair the outer ring,—the exceptional depth of the shaft, which is double that of any of the

four other ancient wells discovered at Harappa, being due to the very high level from which the well here was sunk. The remains of a wall some 200 feet long, with an average height of 4 to 5 feet, were also discovered this season.

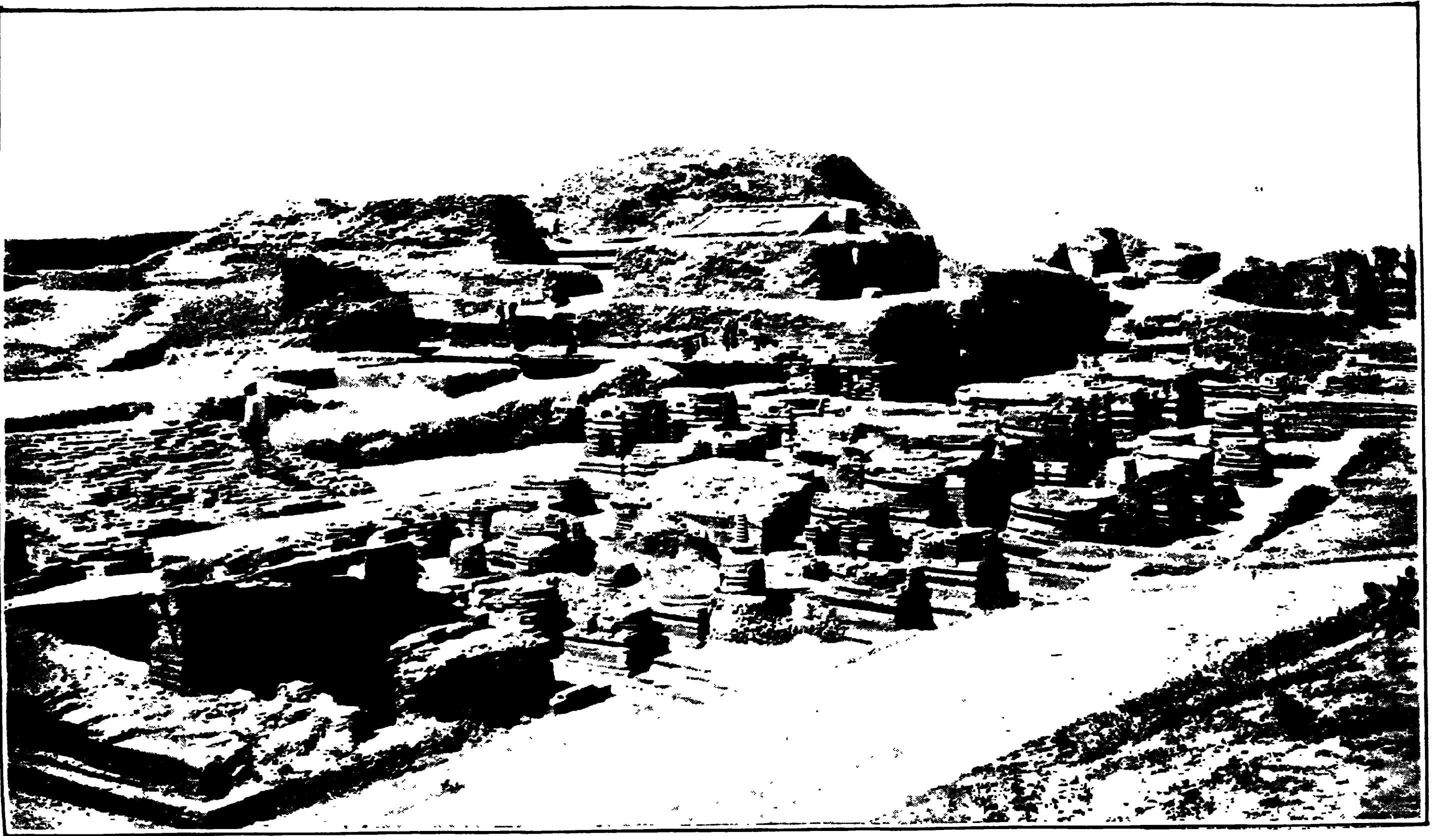
The Survey of prehistoric sites in Sind which was started last year, with results duly described in our previous Report, was continued during 1930-31 in the hilly region West of the Indus in the Districts of Larkana and Karachi, and resulted in the discovery of chalcolithic remains at as many as 24 places. Some of these sites are situated along the Khirthar Range in the vicinity of Lake Manchhar, and others along the camel track that leads from Jhangar in Larkana District to Karachi through the Kohistan or hill region of Western Sind. The sites explored seem to lie in a regular chain starting from Pandi Wahi near Johi in the Larkana District, in the North, to a place within seven miles of Karachi, on the way to Las Bela in Baluchistan, in the South. Trial excavations were carried out at most of these sites and fairly large collections of painted pottery, cherts, beads, copper implements and other characteristic relics were made; and it is hoped that by following this chain, which has been traced without a break for two hundred miles, it may ultimately be possible to discover the trade-route that must have connected India with Iran in prehistoric times. The ruins from which the antiquities were recovered are those of stone buildings situated on hills or in valleys directly adjoining, where there is often a perennial supply of water from natural springs. At Ali Murad near Johi were found the remains of a fortress enclosed by a stone wall 5 feet wide; this wall was followed up to a length of 170 feet, and within the enclosure a well of rough-hewn stones, 8 feet in diameter, was discovered. Remains of stone buildings were also laid bare at Lohri on the Northern bank of Lake Manchhar, 8 miles from Ali Murad. These buildings are the earliest examples so far known of stone architecture in India, and present an interesting contrast to the brick-built structures exposed at Mohenjodaro, with which many of them were contemporaneous. The collection of pottery obtained from this Survey includes at least three distinctive wares; one similar to the black-on-red pottery from Mohenjodaro, another a pale ware with, very often, polychrome designs, and the third, a grey ware with incised decoration. The pale pottery is particularly interesting, for examples showing identical painted designs and presenting the same

technique were obtained from the chalcolithic sites explored by Sir Aurel Stein in Southern Baluchistan; and the fact that it has now been discovered on the Western borderland of Sind indicates that the culture represented by this ware extended throughout these two areas and possibly also to Eastern Iran, where a not dissimilar kind of pale pottery has also been found. A further demonstration of the intercourse between Sind and Eastern Iran in these early times is furnished by a leaf-shaped stone arrow-head discovered at Pandi Wahi, which is similar to the arrow heads in the Quetta Museum collected by Sir Henry McMahon in Sistan during the Perso-Afghan Boundary Commission of 1903-5.

Turning now from prehistoric to historic times, we may describe first the discoveries made this season during the course of the excavations at Taxila, which were again of much interest. Here Sir John Marshall's operations were mainly directed to clearing up some of the outstanding problems relative to the history of the several cities on the Bhir Mound and in Sirkap. He has now ascertained that there were not more than four successive cities on the former site. The latest of these was in occupation at the beginning of the II century B. C., when the Bactrian Greeks overran this part of the Punjab, and the second when Alexander the Great came to Taxila in 326 B.C.,—a fact that is demonstrated by the discovery in the second stratum of Hellenic pottery and of coins of Alexander and Phillip Aridaeus. In the absence of similar precise evidence in the lower levels it has not yet been possible to determine the dates of the two earlier cities, but in view of the rapidity with which city succeeded city in later times at Taxila, there seems no reason, despite the fact that the buildings of the first settlement are distinctly rougher in construction than their successors, to suppose that the site was occupied earlier than the VI or VII century B. C. In all four levels now exposed the buildings and streets were laid out very irregularly, and in some points of construction and detail the houses were definitely inferior to the earliest buildings at Sirkap. With the establishment of Greek rule at Taxila occupation was shifted from the Bhir Mound to Sirkap, and to this age belong both the first and second cities on the new site. A find of interest made in a house belonging to the second city in Sirkap was a group of objects comprising a bronze ceremonial water vessel (*kamandalu*) of typical Indian pattern, a bronze standard lamp with four legs ornamented with

spread-winged birds, a bronze incense burner and the remains of a bedstead of wood covered with brass or copper sheeting. The succeeding city (that is, the third from the bottom) dates from the reign of one of the early Scythian kings,—probably Azes I, many of whose coins were found buried in small hoards beneath the house floors. It was evidently this monarch who first laid out the city in the straight regular streets which continued to distinguish it to the end of its history, and contracted its perimeter, substituting well-built walls and bastions of solid stone for the older fortifications of mud; and the magnitude of the structural alterations dating from this period indicate that the Scythian conquest of Taxila was in all probability accompanied by widespread havoc and destruction of property. How violent were the times of the Greeks, Scythians and Parthians may be gauged from the fact that Sirkap was apparently reduced to ruins and re-built no less than six times within a space of 300 years. It was on the last of these occasions that the many treasures of gold and silver found by Sir John Marshall, and described in our last Report, were hurriedly buried and never afterwards reclaimed, doubtless because their owners had been put to the sword or driven into exile. The co-ordination of these treasures with other antiquities found with them has made it clear that this catastrophe occurred when the Parthians were overcome by the Kushans a little before 64 A. D., and we are thus provided with an important means for determining the dates of many rulers connected with Taxila, notably Pacores, Zeionises, Aspavarma, Sasas and Satavastra, as well as for reconstructing the history of local art during the I century A. D., since it is now for the first time possible to differentiate between the sculptures produced in the Scytho-Parthian and Kushan periods respectively. Among other finds of interest recently made in Sirkap were an inscribed ladle and bowl of silver, and a series of square coins issued by a hitherto unknown ruler named Vijayamitra with a legend in Kharoshthi on the obverse and in early Brahmi on the reverse. The coins date from the second half of the I century A. D., and were probably struck, not in Taxila itself, but in some district of the Eastern Punjab,—possibly Audumbara,—where Brahmi was used equally with Kharoshthi.

In addition to these operations in the ancient cities of Taxila, an imposing Buddhist stupa and monastery of the later Kushan period were excavated during the year at Bhamala near the head



EXCAVATION OF BUDDHIST STUPAS AT NALANDA, NEAR PATNA.

of the Khanpur valley some 13 miles from Taxila, and the clearance of the monastery attached to the great Dharmarajika stupa,—the most important institution of its kind in the neighbourhood,—was also started. The Bhamala group of edifices is noteworthy for the boldness of its architectural detail, and the stucco figures which adorn it display more character in their modelling than was usual at this date; several of the panels depict the death of the Buddha, a subject which has not hitherto been found treated at Taxila. There is also present an interesting pavement of terracotta tiles incised with Buddhist symbols, which resemble those at Harwan near Srinagar in Kashmir. Like all other Buddhist monuments in the neighbourhood, the monasteries both of Bhamala and of Dharmarajika were sacked and burnt by the White Huns (Ephthalites) towards the close of the V century A. D., and the evidence of their violence is only too apparent in the abundance of charcoal, fiercely burnt masonry, charred manuscripts, gold and silver coins, and human skeletons lying in contorted attitudes among the ruins. The gold coins are issues of the Kidara Kushans, the silver of the White Huns themselves. The latter were probably in circulation at Taxila before the actual destruction of the monasteries, which may be assumed to have taken place some time after the White Huns had taken possession of this part of the Punjab.

At Nalanda in Bihar, the excavation of the Buddhist university city, to which brief reference was made in last year's Report, was continued. The remains here, which range in date from the VI to the XII century A. D., indicate that the city fell into ruins a number of times and was as often re-built. The lay-out of the city is characterized by a range of detached monasteries along the East side and a corresponding range of stupas along the West. A number of these monasteries, and also the main stupa at the South end of the site, were excavated in previous years, and in the year under review the stupa site No. 11, situated next to the main stupa, was cleared and a large number of small votive stupas that had been erected around it by pious devotees were revealed. This stupa differs considerably in plan from the main stupa next to it, and lacks the many stucco images with which its neighbour is embellished, its own decoration being limited to brick niches and pilasters of various patterns. Well-wrought plaster reliefs of animal figures with the Deer and the Wheel of Law in the centre were, however, recovered in a later structure excavated at a higher level

towards the Southern end of this site. These reliefs occur on what appears to have been a pedestal that once supported a large stucco image of Buddha in the preaching attitude. As soon as the buildings at Nalanda are excavated steps are taken to conserve them; the chief work of conservation done this year was to monastery No. 8, where the ruined walls and cells and the main entrance gateway were in part reconstructed from internal evidence and a subsidiary shrine in the courtyard was repaired. A new approach road connecting with the District Board road was constructed, and an original passage between two of the monasteries was opened up again to connect with the approach road and bring visitors straight to the site. Among the minor antiquities recovered at Nalanda were a stone image of Buddha in *bhumisparsamudra* and a very well executed standing figure of Avalokitesvara. Another important find was a missing portion of an inscribed stone slab that had been found in a previous year, which enables this inscription to be fully deciphered.

At Paharpur, in Bengal, excavation was continued in the great monastic courtyard containing the massive central temple of brick, and around the high panelled basement of the temple was exposed a regular line of low walls that doubtless bounded the original *pradakshina* path. The excavation in this courtyard further revealed the ruined remains of a small shrine that appears to be a miniature replica of the great central temple, apparently of the Pala period (IX-X century A. D.), the main shrine itself dating from about the VII century. Nearby were also disclosed a large well, 8′ 6″ in diameter, and also the bases of five votive stupas, one of which recalls the star-planned *façade* of certain Chalukyan temples. Deeper digging to an earlier stratum towards the South of the quadrangle revealed the remains of a spacious hall three bays in width, which appears to have been provided originally with wooden beams on rectangular pillars of brick and to have been eventually destroyed by fire. The cell-lined walls that enclosed the monastic quadrangle were also further excavated on the Eastern and Southern sides, and the *façades* of all four sides of the quadrangle have now been exposed to view. The work of repairing the cells exposed was continued, and much of the Eastern wall of the courtyard was built up, along with the North gate-house, in strict conformity with the old work. Among the minor antiquities found were a number of interesting terracotta *plaques*, and

a miniature standing image of Kuvera inscribed with the Buddhist creed in characters of the IX century A. D. At Mahasthan, also in Bengal, two terracotta figurines were found. These are of the Sunga period and thus represent the earliest antiquities that have so far been recovered in Bengal.

At Nagarjunikonda, in the Madras Presidency,—a site which dates from the II or III century A. D.,—further excavation brought to light two more ruined stupas, one of which was found to contain earthenware pots and the bones of animals. A few more valuable sculptures of the Amaravati style have also been discovered; and the numerous stupas, monasteries and temples on the site have been repaired and made more accessible by improving their surroundings.

In Burma, owing to the disturbances in certain parts, attention was mainly directed during the year to the examination of ancient sites in Pagan and in the area between Myinpagan and Thiyipyitsaya. Forty-two mounds and sites marking the position of old temples, monasteries and stupas, were examined. The finds unearthed consisted of terracotta votive tablets,—many belonging to the period of King Anorata (XI century A. D.) and bearing legends in Pali, Sanskrit or Talaing but not in Burmese,—some stone stupas, several images of the Buddha in stone and bronze, a few gold, silver and bronze finger rings, bronze utensils, earthenware urns,—two of them glazed and heart-shaped and containing mercury,—and fragments of an inscribed stone slab. Small stone images of Ganesha were also found among the ruins of Buddhist shrines; and other mounds yielded a small bronze image of a Bodhisattva and two small stone *plaques* illustrating the principal scenes from the Buddha's life, one of which is an exquisite piece of carving assignable to the XII century A. D.

An important question bearing on the future of archæological excavation in this country, which is being considered by the Government of India in consultation with provincial Governments, is to what extent non-official agencies, Indian or foreign, should be permitted to undertake archæological excavations in this country. At present the position is that under the Ancient Monuments Preservation Act provincial Governments have powers to restrict and regulate excavations only for the purpose of protecting or preserving an ancient monument, and thus, although they may control operations, such as mining or quarrying,

that are likely to jeopardize the safety of a standing monument, they are not in a position to interfere with excavations undertaken for the purpose of archæological research; so long, therefore, as the safety of a standing monument is not imperilled, the owner of an ancient site may excavate it without hindrance, and only the operation of the Treasure Trove Act of 1878 limits his freedom to dispose of his finds as he pleases. In order to enable the Government to exercise adequate supervision over the operations of private excavators, it is now proposed to make two amendments in the Ancient Monuments Preservation Act, the first designed to extend the definition of ancient monuments so as to include sites where antiquities are buried or are believed to be buried, and the second to empower the Government to make rules for the control of archæological excavation and the disposal of the finds. The rules that have been recommended for adoption in India follow closely those that have been in successful operation for many years past in Egypt, Palestine and Mesopotamia. They prescribe the conditions under which permits to dig will be granted and how the finds made will be disposed of. This latter point is of special importance, and the intention is to ensure that all objects of national importance shall be reserved for the State, the remainder being equally divided between the State and the finder. By objects of national importance are meant those whose artistic merits or historical and religious associations are such that there are obviously strong reasons for retaining them in the country of their origin; among them will be classed, for example, the edict pillars of Asoka, historic statues, cult images, and sculptures pertaining to standing monuments. In the buried cities of India there is an almost inexhaustible store of antiquarian wealth awaiting investigation, and the desirability, both in the interests of the national museums and of scientific research in general, that this should be turned to the fullest account cannot be questioned. But the scope for investigation and research is so vast that it would clearly be impossible for any Government agency to undertake the work unaided. The assistance of private excavators, subject to suitable safeguards, is therefore to be encouraged; and since their work costs money, it is only reasonable that they should obtain some return for it in the form of a share in the finds they may make. In Mesopotamia, Egypt and in the Near East generally non-official help in excavation has been of the utmost value, not only because of the rich

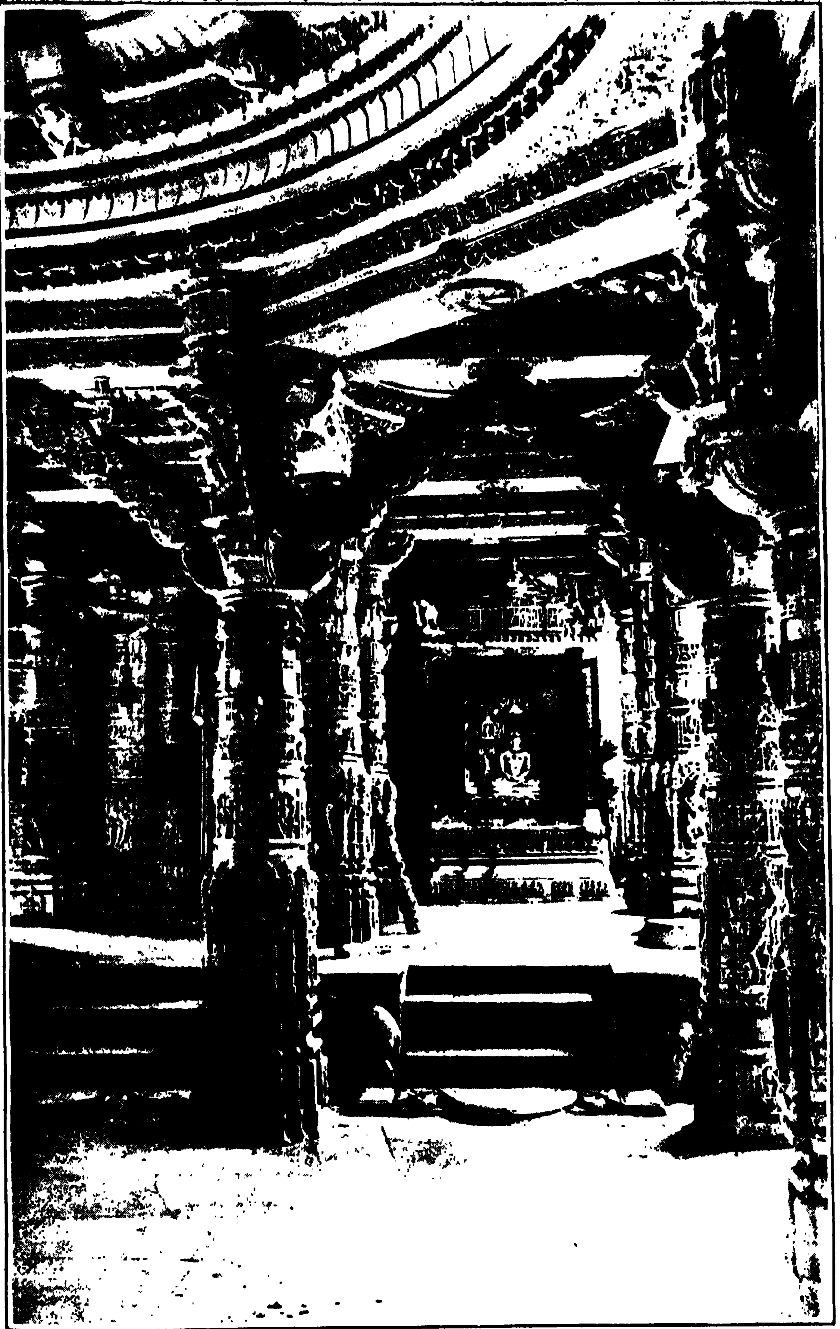
collections that have accrued to the State as a result of it, but also because of the powerful stimulus it has imparted to oriental studies as a whole; and the adoption of a similar policy in India would, it is felt, yield correspondingly good results.

Useful work was again done by the Archæological Chemist during the year in treating antiquities recovered from excavations, nearly 2,000 antiquities having been received in his laboratory for preservative treatment; about 50 specimens of metals, minerals, decaying stone and such like were also submitted to him for chemical analysis. Some large Buddhist paintings on silk in the Central Asian Antiquities Museum at Delhi were found to require his attention and were transferred to a silk backing and mounted on stretchers to strengthen and preserve them. His advice has been given on the preservation of disintegrating stone at the famous Pagoda at Konarak, of the fine wood work of the Sun Temple at Katarmal, of the important *plaques* and sculptural reliefs at Paharpur, and of the stone roof of the Jama Masjid at Delhi. Experiments have also been made by him with various stone cements, and a special preparation composed of magnesium oxide and chloride has been evolved, which has been found excellent for repairing stone antiquities. The successful eradication of rank vegetation and jungle growth from ancient monuments is a big problem in India, and it is gratifying to record that good results have been obtained in this direction with a dilute solution of sodium arsenite.

Considerable progress has been made in epigraphical research during the year. The most important discovery was another version of the Emperor Asoka's minor rock edicts at Kopbal, a place situated in the extreme South of Hyderabad State. The "activity" of this great and pious monarch, to which he himself refers in this edict, is amply attested by the fact that no less than six copies of this edict were engraved under his orders in this remote corner of his dominions,—three in North Mysore, two in South Hyderabad, and one in North-Western Madras, all within a hundred miles of one another. The Kopbal inscriptions have not yet been properly studied, but it is hoped that before long they will be available to scholars interested in the subject. Other epigraphical activities in South India include the collection of over 300 new inscriptions in the Madras Presidency, pertaining to the Chalukya, Pallava, Chola and Pandya rulers, and work on the

deciphering of the collection of Kanarese records from the Bombay Karnatic. In order to accelerate the publication of the texts of Kanarese and Telugu inscriptions copied in the Madras Presidency between 1904 and 1929, the Government of India have entrusted their editing to outside scholars, and this work is progressing well. In North India the most important records examined during the year were those recently secured for the Curzon Museum of Archæology at Muttra. Here an inscription engraved on a pillar in the Gupta year 61,—which is equivalent to 380-381 A. D.,—during the reign of the Emperor Chandragupta II, is of interest in that this is the earliest date at which this ruler has been proved to have been on the throne. Another record here, also on a pillar, pertains to the reign of the Kushan King Huvishka, for whom it gives the earliest date yet known, the year 28, when apparently he ruled conjointly with his predecessor Vasishka. Another important record, described in the *Epigraphia Indica* published by the Archæological Survey, is the stone inscription of Yasovarmmadeva that was unearthed in the excavations at Nalanda. This inscription proves that the name of the king who was chiefly responsible for the defeat of the Hunas (Huns) in India early in the VI century A. D. was Yasovarmmadeva, and not Yasodharmadeva as was previously supposed.

Satisfactory work has been done during the year in the immense and responsible task of conserving the ancient monuments, numbering over 3,000, that are now maintained by the Archæological Survey. In Assam, the group of temples at Gaurisagar and Jaysagar received attention, and also the Ahom Raja's Palace at Garhgaon. In Bengal, preliminary work has been done to the XIII century mosque and tombs at Tribeni, which are ascribed to Zafar Khan Ghazi and are the oldest Muhammadan buildings in the Province; a small stone temple at Garui some 300 years old was extensively repaired, and other conservation works were done at the great Satgumbaz Masjid at Bagerhat and at the Mosque of Baba Adam at Rampal. In Bihar and Orissa, the Palace of Raja Man Singh, Akbar's deputy in Bengal, on the hill fort at Rohtas, was the principal monument under repair, and two more of the dilapidated oriel-balconies that are so picturesque a feature of the *façades* were dismantled and re-built. The ruined Jama Masjid at Hadaf, also built by Raja Man Singh, was saved from further collapse, and the needs of the Mughal Bridge nearby and again of



INTERIOR OF DILWARA TEMPLE, MOUNT ABU.

the Gupta temple of Mundesvari at Ramgarh were attended to. In the Bombay Presidency the largest work undertaken was at Vijayadurg, where extensive repairs to the damaged walls of the Sea Fort were carried out. At Bijapur, repairs were done to the Gol Gumbaz, the Asar Mahal, the city walls and moats, and the Ramling tank; and the large tank in front of the Sangit Mahal at Torvi in the neighbourhood has been further excavated. In Gujerat the repair of the retaining wall of the large tank at Viramgam was completed; and the tombs at Vatwa received attention, as also did the Nagina Masjid, the Lila Gumbaz and several other important monuments at Champaner. In Sind, repairs were done to the tomb of Ghulam Nabi Khan Kalhora at Hyderabad and the Buddhist stupa at Gaja. The well-known caves at Elephanta were attended to and the area in front of Cave No. 3 was cleared of a lot of *débris*, revealing an unfinished lower storey of the cave. *Débris* also was removed from about the ancient buildings in the fort at Bassein, and a bastion of the Shanwar Wada in Poona city that collapsed in the previous monsoon was reconstructed. In Burma, the principal repairs done were at the Abhayadana temple at Myinpagan, whose construction is traditionally ascribed to the XI century king Kyanzitha. The chief interest in this temple lies in the paintings that have recently been discovered on the inner face of its walls, the fact of their being very faint and situated high above the floor having prevented their being noticed before. They depict most of the Mahayanist pantheon and undoubtedly should be considered one of the more important archæological discoveries that have been made in Burma. Besides the figures of Avalokitesvara and Tara and Buddha himself, they include other Mahayanist gods and goddesses which, on account of their hideous features, bared fangs and necklaces of human skulls, were repugnant to the Hinayanists. Nevertheless, their representation of the Jatakas according to the Avidurenidana of the Pali recension, indicates that as they now exist they are partly of Hinayanist origin. Other contemporary paintings are preserved on the walls of the Kybyaukkyi and Nagayon temples at Pagan; but the Abeyadana paintings are unique in the number of Mahayanist gods and goddesses they portray. It is of particular interest, too, that among these deities are also depicted two seated human figures, one with a boar's head and another with an elephant's, which represent incarnations of Vishnu and Ganesha, respectively. This strange

medley of figures, Hindu and Buddhist, Hinayanist and Mahayanist, is of course not peculiar to Burma, but it indicates further how largely Hinduism had encroached on Buddhism by the XI century A. D. At Mandalay repairs were done to two *pyatthats* on the Fort walls. These *pyatthats* had been blown down in a gale and were built up in accordance with the similar features still existing on the Fort wall. In the Central Provinces, the fallen bastion of the little fort at Balapur was built up again and repairs were done to the Mahadev temple at Kodal. At Delhi, the Purana Qila, the Satpula sluice at Khirki, the tomb of Safdarjang, the Diwan-i-Khas in the Delhi Fort, and the Begampuri Masjid were the principal monuments that received attention; and the clearance of earth around the Bijai Mandal was instrumental in disclosing some interesting lower storeys of this structure, suggesting its possible identification with the " Palace of a Thousand Columns " built by Muhammad Ibn Tughlaq in the XIV century. A number of gold *padmatankas* found during the clearance of some masonry-lined pits here are of special interest, as possibly having been brought back from Southern India by Alauddin Khilji, the first Muslim invader of the South. The very attractive gardens maintained by the Archæological Survey in the Delhi Fort and at Safdarjang's tomb, at the Qutb, Haus Khas, and at Humayun's tomb, add greatly to the charm of these monuments. In the Madras Presidency, repairs were done to the hill forts at Udayagiri and Ratnagiri, the old town wall of Madras, the Dansborg Castle at Tranquebar, the Valisvara temple at Tiruvalisvaram, the Siva temple at Kambaduru, the temple at Timmalapuram and the Mahal at Gurramkonda. In the Punjab, the principal work was again the restoration of the Mughal gardens and courtyards of the Lahore Fort, where about Rs. 50,000 have been spent; about 10 acres of land have been cleared of later accumulations and levelled, lawns being laid down in the court of Jehangir and that fronting the Diwan-i-Am. Two gateways of the Fort, known as the Hatipol and the Hazuribagh Gate, have also been repaired, and the collection of Sikh arms and armour hitherto inadequately housed in a small room in the Sishmahal has been removed to the more spacious Bari Khwabgah in Jehangir's courtyard and suitably displayed in glazed cases. At the tomb of Jehangir at Shahdara the dilapidated central causeway leading to the tomb from the West has been repaved to match the original work, and other improvements made both



THE AKBARI BRIDGE AT JAUNPUR.

here and at the Shalamar garden in Lahore; and at the Begam-ki Sarai, built by Akbar on the banks of the Indus at Attock, the repairs in progress were carried to completion. In the United Provinces, the Fort and the Taj, Itimad-ud-Daulah's tomb, the Chini-ka Rauza and the Ram Bagh at Agra, Akbar's tomb at Sikandra, and his deserted city at Fatehpur Sikri, the Kos Minars that mark the track of the old Badshahi highway through the Muttra District, a ruined kiosk on the Akbari Bridge at Jaunpur, the British Residency at Lucknow of Mutiny fame, the Idgah at Rapri, the Gupta temple at Deogarh, the Asoka rock inscription at Kalsi, and other monuments were repaired.

In regard to Museums, an important work in which the Survey assisted was arranging the exhibits that were transferred from the old provincial Museum at Muttra to the new Curzon Museum of Archæology there, and the services of the Superintendent of the Archæological Section of the Indian Museum at Calcutta were lent to the local authorities for this purpose. All the best and most typical sculptures have been selected for display, and the exhibits have been arranged as far as possible in accordance with the historical development of art at Muttra; thus Sunga sculptures, introduced by the colossal Yaksha statue from Parkham, are followed by different types of Jain and Buddhist images pertaining to the vigorous school of art that flourished at Muttra from about the beginning of the Christian era, when the Saka satraps held sway, to the downfall of the Kushan Empire about 300 A. D. Among the headless images of Kushan kings in this collection is one inscribed with the name Kanisha. The examples of the Gupta period in this museum include a life-size image of the standing Buddha, which is a masterpiece of Gupta art; and the collection is rounded off by some fine examples of post-Gupta Brahmanical sculptures.

After Archæology, the geographical work done by the Survey of India next claims our attention. The primary function of the Department is to undertake responsibility for all topographical surveys and explorations, and to prepare and maintain geographical maps of the greater part of Southern Asia. In the past the Department also carried out the original large-scale revenue surveys for most of India, and was still conducting this work for Central and Eastern India and Burma up to 1905, when all revenue surveys were handed over to the Provinces concerned, in order that the Department might devote its energies to preparing a complete new

series of topographical maps on the 1-inch = 1 mile scale. Hopes were expressed at that time that it would be possible to complete this series by 1930, but owing to retrenchment and the War little more than half the work has been done, in spite of the reduction of the scale of survey for less important areas. Thus, although new surveys covering an area about equal to that of England are carried out in India every year, the maps of about half the country are still very old and only kept up to date roughly by means of rather perfunctory information supplied by local officials; the old maps, also, have an error of about two miles in geographical position, being based on a longitude of Madras determined in 1815. Apart from revenue surveys, boundary surveys and records of international, state, and provincial frontiers have always formed an important item of the Department's topographical work; and in recent years there has been considerable progress in the preparation of special guide maps for important cities and military stations, where the ordinary 1 inch = 1 mile scale is quite inadequate.

Another extremely important aspect of the Survey's functions is its geodetic work, which includes the construction of the main trigonometrical framework which extends in places far beyond the frontiers of India, and of control networks of precise levelling based on tidal observatories; the prediction of tides and the publication of tide tables for 40 ports between Suez and Singapore; astronomical, magnetic, seismographic, and meteorological observations at Dehra Dun; and investigations of the fundamental problems of geodesy, for which India, being placed between the greatest highlands of the world and a deep ocean extending to the Antarctic, is a uniquely favourable site. Studies of these particular geodetic problems undertaken in India have disclosed by far the largest known anomalies in the gravitational attraction of the earth's crust, and these, together with the facts provided by the trigonometrical survey, have afforded an invaluable basis for estimates of the size and shape of the earth. On these terrestrial measurements of course depend many of the fundamental calculations of astronomy and physics.

In addition to its topographical and geodetic work, which is financed from Central revenues, the Department is steadily developing the policy of aiding local surveys in various ways, on payment by those concerned. These miscellaneous operations include all

forest and cantonment surveys; many riverain, irrigation, railway and city surveys, and surveys of tea gardens, mining areas and so forth. Administrative assistance is also given in aid of the revenue surveys of various Provinces and States. The Printing Offices of the Survey do much useful work for other Government Departments, especially in the preparation of maps and illustrations; and the Mathematical Instrument Office gives valuable aid to Government institutions by maintaining a high standard of technical equipment, especially in connection with optical work, and by undertaking the manufacture and repair of high-class instruments which would otherwise have to be acquired from overseas. The Department is also responsible for all survey operations required by the Army, and has been rapidly adapting itself to meet the increasingly complicated requirements of the military authorities, particularly in connection with aerial survey work. Surveys in connection with civil aviation are also being encouraged and assisted, and some interesting experiments in stereo-photography have recently been undertaken.

We may now summarize the activities of the Survey during the latest period for which detailed information is available, namely the survey year ending on the 30th of September 1930. The total area surveyed topographically was considerably larger than in the previous twelve months, and amounted to 61,000 as against 48,000 square miles; most of the surveys were on the scales of 1 inch or ½ inch = 1 mile. In addition to the normal programme of forest and cantonment surveys, a number of special surveys were done at the request of provincial Governments, other official organizations, and private concerns. These included boundary surveys of Mandi and Suket States in the Punjab; a large-scale survey from air-photographs of Indore city in the Central India Agency; traversing for air surveys in the Sitapur and Bahraich Districts in the United Provinces; estate surveys in the Coimbatore and Nilgiri Districts of the Madras Presidency, in the Hassan and Kadur Districts of Mysore State, and in Travancore State; and special surveys of the Twante, Twante Ridge, and Wanetchaung rubber estates in Burma. Apart from this, the survey work in connection with the Lloyd Barrage Irrigation Project, in Sind, which we mentioned in our previous issue, was completed, and surveys were also undertaken for two other irrigation works, namely those at Muzaffargarh and

Bakhra. The latter project involves the construction of a dam 500 feet high in the Sutlej, the storage capacity of which will be over 4½ million foot acres of water, and the survey operations in connection with it, will, it is estimated, take 12 years to complete.

As regards exploration, there are comparatively few events to record. In our last Report we mentioned that Khan Sahib Afraz Gul Khan, Extra Assistant Superintendent in the Survey, had accompanied the Dutch explorer, Mr. P. C. Visser, on his expedition to the Karakoram Range, and we described some of their achievements. During the year under review full details of the work done became available. In the months of June and July 1929 the great glacier tributaries of the Lower Siachen Glacier and the side valleys and glaciers of the Upper Nubra Valley were explored and mapped. The expedition then crossed the Saser Pass, explored and surveyed the valleys of the Chimshin Jilga and the Tughmo Zarpo Lungpa which drain the East side of the Nubra-Shyok watershed. Later the source of the Chip-chap and the neighbourhood of the Kara-tāgh Pass and the upper Kara-Kāsh river were visited and surveyed. The total outturn of survey work by the Khan Sahib during 82 working days was 2,300 square miles of ½ inch=1 mile mapping. When the Shyok Dam burst on the 15th of August 1929 the members of the expedition were encamped 19 miles from it beyond the up-stream end of the Kumdan Lake; and from the information they received it appeared that though the Shyok Lake was entirely emptied, the breach in the dam was narrow and would probably close again during the following winter, which in fact it did. The only other events in connection with exploration which are worth mentioning are the results obtained by the party in the North-West Frontier Province, which continued its survey of tribal territory adjacent to Hazara District and practically finished surveying the Black Mountain, which had not been visited since the expedition to it in 1888-91.

The geodetic work of the Survey again progressed satisfactorily during the year. Continuous record of longitude was maintained at Dehra Dun by observations twice a week with the bent transit, and by reception of wireless time signals from Bordeaux and Rugby. A latitude variation programme has also been started there with the large zenith telescope; the programme is divided into a chain of 6 groups of stars of which two groups are observed on each working night, about 100 pairs being observed each month. The mag-

netic observatory at Dehra Dun continued its record of the three magnetic elements; and the Omori seismograph was in regular operation. Observations were also made daily for the Meteorological Department throughout the year. The preparation and publication of the first issue of the amplified tide tables of the Indian Ocean for 1931 was completed, and advance copies of the tables for certain Indian ports for 1931 were prepared and despatched to the Hydrographic Department of the British Admiralty, and to the authorities in the United States and Japan, by the end of 1929. Curves for the 40 Indian ports for 1932 were run off on the tide predicting machine and completed. Observations to determine the force of gravity were made at 6 stations in the Bombay Presidency, 10 in the Madras Presidency, 4 in Hyderabad State, and one each in the Central and United Provinces. Primary triangulation was carried out in the Southern Shan States of Burma during the year by two detachments, one working in Kengtung State to connect the Great Salween Series with the Siamese triangulation, and the other completing a link of the Chittagong Series, and then observing the Western stations of the Mong Hsat Series. 1,096 miles of high-precision levelling for the new geodetic level-net of the whole of India was finished, together with 1,849 miles of single high-precision levelling for the United Provinces, Central India, the Central Provinces, Rajputana, Bombay, the Punjab, and Baroda. Secondary levelling of 644 miles was carried out for the East Indian Railway, and of 61 miles for the Commissioners of the Port of Calcutta. Tables were computed during the year for use in connection with the military Lambert grid. A series of 7 grids has been adopted which cover the whole of India and Burma, and tables are being prepared for converting the co-ordinates from spherical to rectangular, for computing triangulation in terms of the grid, and for plotting the grid on maps with spherical graticules. The co-ordinates of 300 points in Waziristan were converted from spherical to grid. The figural adjustments of the secondary triangulation carried out in the North-West Frontier Province in 1927-28 were completed during 1929-30, and the compilation of the Persian triangulation was proceeded with. Twenty-four triangulation pamphlets were compiled, mostly on the Burmese frontier.

During the year ending on the 30th of September 1930, 671 departmental maps, including reprints and new editions, were

published by the Survey, and in addition numerous special maps and plans were prepared for the Army, provincial Governments, the Railways and other organizations. Of the new maps, 117 were surprinted with grid, as also were about 15,000 stock copies of maps previously published. The minute mesh in use for the last 5 years has been replaced by a rectangular grid based on the British modified grid. The value of work done in the Mathematical Instrument Office, including manufactures and repairs, and instruments supplied to public offices and so forth, was about 8 per cent. less than in the previous year, which is not surprising in view of the trade depression. The special works carried out during the year included the manufacture of three large and three small ampoule fillers designed for the officer in charge of the Bacteriophage Enquiry conducted by the Indian Research Fund Association at Bankipore, to deal with the possible outbreak of cholera at Patna. The ordinary manufactures included 1,470 plano-convex lenses, 1,971 diaphragms for levels and theodolites and dial sights, 641 colour glasses for telescopes and compasses, 107 prisms for binoculars and compasses, and 248 graticules for binoculars, monoculars and dial sights, all of which, were it not for the existence of the Mathematical Instrument Office, would have had to be imported from abroad. A large number of telescopes, dial sights, directors, watches, prismatic compasses, binoculars, range-finders, and so forth were repaired for the Army and other Departments during the year, and the co-ordinatograph, which was manufactured specially for the Indian Air Survey and Transport Ltd. and has proved very satisfactory, was attended to. It has measured 3,000 co-ordinates daily, for a three-shift day, from 6 a.m. to 12 midnight for 24 months,—which amounts to nearly 2,000,000 readings.

During the year Major K. Mason, M.C., R.E., and Mr. B. L. Gulatee, M.A., attended the fourth General Assembly of the International Union of Geodesy and Geophysics held at Stockholm in August; and at the first plenary session, India's admission to the Union as a separate unit was proposed and carried unanimously. In September, the International Congress of Surveyors and the third International Congress for Photogrammetry were held at Zürich, and Major W. J. Norman, M.C., R.E., was deputed to attend these meetings as a representative of India.

We will now turn to consider the functions and achievements of the Geological Survey. Prior to 1851, there was no official Geological Survey in India, although the Government had already employed geologists for special purposes from time to time. But in that year Dr. Thomas Oldham, of the Geological Survey of Ireland, was brought out to organize a Geological Survey in India, and this has been in continuous operation ever since. Within a few years of its foundation, the strength of the Department's staff was 12, and this number has been gradually increased until the present total strength of the gazetted scientific staff is 36,—a number which in view of the vast tracts of country to be investigated, and the richness of India's mineral deposits, must be regarded as small; at any rate it is far from comparing in size with the staff employed for surveys of equivalent areas in Europe and North America. The principal justification for the maintenance of an official Geological Survey by the State is that it stimulates the exploitation of the country's mineral resources, since systematic geological investigation reveals the conditions under which minerals of economic value occur, and thus renders it possible for prospecting operations to be conducted by private enterprise upon an intelligent basis. But apart from the purely utilitarian benefits to be derived from it, the establishment of a Geological Survey may be considered to be well justified from the broader cultural and intellectual point of view, since it is obviously desirable that a self-respecting country should accumulate as much scientific information as possible concerning the composition and structure of the foundations upon which everything else in its territories is supported.

In order to provide scientists and the general public with accurate information concerning the systematic researches which it has conducted during the 80 years that have elapsed since its foundation, the Department undertakes the issue of three distinct scientific publications at regular intervals. The first of them, known as the *Memoirs of the Geological Survey of India,* was started in 1859 and has now reached Volume LVIII; it contains comprehensive studies of the geology of particular tracts of country and accounts of the resources of India in minerals, such as coal, manganese-ore and petroleum. The second series of publications is the *Palaeontologia Indica* which was instituted for the description of the collections of fossils obtained during the operations

of the Survey. These collections are sent to those who specialize in the study of the various groups of animals and plants concerned, the specimens described being treated as type fossils and stored in a special collection for reference purposes. The *Palaeontologia Indica* has been in existence since 1861, and is handsomely illustrated. The third series of volumes, known as the *Records of the Geological Survey of India*, was first issued in 1868 and now consists of sixty-four volumes. In addition to these three major publications on systematic geology, several special works, such as *A Manual of the Geology of India*, a *Bibliography of Indian Geology and Physical Geography*, and various guides to the geological collections in the Indian Museum have been issued by the Department from time to time. Finally, mention must be made of an important annual publication undertaken by the Department on a specifically economic subject, namely the rate of production of the various minerals obtained in India, without which it would be impossible either for the Government or the commercial community to obtain an accurate idea of the way in which the country's mineral industries are being developed. Every five years these annual reviews are consolidated and expanded into a special quinquennial review, in which the progress made in the exploitation of India's mineral resources is more elaborately surveyed. One of these quinquennial reviews, namely that for the years 1924 to 1928, was issued during the period we are reporting.

The headquarters of the Geological Survey have been established in Calcutta, partly because of the association of the Department with the Indian Museum, within which the extensive and important geological collections made or acquired by the Department are housed and exhibited, and partly because Calcutta is in any case a convenient centre for geological operations, since several of the more important mineral fields of India are near it. The officers of the Department disperse for field work to all parts of India at the beginning of the cold weather, but return for recess to Calcutta. A sub-office of the Survey is maintained in Rangoon, and in addition a resident geologist from the Department is stationed at Yenangyaung as Technical Adviser to the Warden of the Oilfields in Burma, and provides him with help in supervising the operations of the oil companies, and ensuring that the most economical methods are used in the production of oil and gas in order that the

life of these valuable mineral assets may be maintained as long as possible.

During 1930, the officers of the Department were as usual engaged throughout a large part of the country in systematic field work, whose main features we shall shortly indicate. In addition, a special investigation into the coal resources of India, which has been in progress for several years, was brought to completion and further memoirs on the subject were issued. Besides systematic geological surveys, which together with researches into the mode of occurrence of particular minerals form the main work of the Department, help is frequently given by members of the scientific staff upon the geological aspects of the various engineering problems that arise in India, such as the stability of hill-slopes, the effects of earthquakes, and,—most important of all,—the provision of water-supplies, either by means of reservoirs or by boring and the construction of artesian wells. Laboratory studies of particular problems are also undertaken from time to time; as an example, mention may be made of a study recently completed of the relationship between the specific gravity of Indian coals and certain of their other properties; an interesting investigation was also made not long ago into the suitability of the froth flotation process for the improvement of Indian coals. Another function of the Department is the assistance it has rendered to geological education in India for many years by furnishing lecturers to various colleges and institutions. At present lecturers are provided at the Presidency College, Calcutta, the Bengal Engineering College, Sibpur, and the Forest Research Institute and College, Dehra Dun, whilst the Director of the Department is *ex-officio* President of the governing body of the Indian School of Mines.

Before we proceed to consider the survey operations and economic enquiries which were in progress during the year, it should be mentioned that several officers had to be diverted from their normal duties to record the effects, and so far as possible to ascertain the causes, of the unusual number of severe earthquakes with which the Eastern part of this country was afflicted. India, it may be mentioned, was not peculiar in this, since the year was distinguished throughout the world as a whole by an exceptional amount of seismic activity. The first of the earthquakes in the Indian Empire was the great Pegu shock on the 5th of May; the second the Assam earthquake on the 3rd of July; and the third the series of severe

earthquakes round Pyu in the Toungoo district of Burma on the 3rd and 4th of December. In each case officers of the Department were detailed to examine the geological implications of the occurrences, and their reports upon them, at the time of writing, were in course of preparation. The Pegu and Pyu earthquakes of 1930, together with the Swa earthquake of the 8th of August 1929, all probably form part of the same series of events, for their epicentres lie approximately in a straight line, and according to the investigations hitherto made, they appear to be connected with movements of the boundary fault of the Shan plateau, or of some other dislocation related thereto lying slightly further to the West. The Assam earthquake, on the other hand, is believed to have been related to some movement of the Assam plateau relative to the surrounding low-lying country. Although there is no direct evidence of any relationship between the movements in Assam and in Burma, it does not seem unreasonable to suppose that some major cause was really responsible for all of them. The Pegu earthquake brought about the almost complete destruction of the town of Pegu and the loss of at least 500 lives; it also caused casualties and destruction in Rangoon, as will be mentioned also in the next Chapter. The movement was felt by human beings as far as the Kyaukpyu and Mergui Districts up and down the coasts, as far North as Möngmit in the Northern Shan States, and across the greater part of the Southern Shan States and the Kingdom of Siam. The outer curve marking these limits passes into the Bay of Bengal, the Andaman Sea and the Gulf of Siam, but the land area actually involved was not less than 220,000 square miles. The shock was registered by recording instruments at seismological stations all over the world. As soon as the magnitude of the disaster was realised, officers of the Burma party of the Geological Survey of India were detailed to undertake its scientific investigation. Mr. Leicester examined the Pegu area and Dr. Chhiber the Kayan-Thongwa-Rangoon region. The latter officer also made examinations in other parts of the Hanthawaddy, Insein and Tharrawaddy districts. Dr. Coggin Brown undertook the collection of data from all the other affected areas and paid several visits to Pegu and the region around.

In the early hours of the morning of the 3rd of July, a large area of North Eastern India was affected by a renewal of seismic activity. On receipt of reports that considerable material damage had been done to buildings and property within Northern Bengal

and Western Assam, Mr. E. R. Gee and Dr. M. S. Krishnan were deputed to carry out an examination of the regions involved. Mr. Gee proceeded to the Rangpur and Goalpara Districts; Dr. Krishnan, meanwhile, investigated the tracts immediately to the West. Although the worst effects of the shock were experienced around the North-Western end of the Garo hills and the adjoining valley of the Brahmaputra (including the town of Dhubri) it was felt very distinctly over a wide area extending from Dibrugarh and Manipur in the East to Calcutta in the South, Patna in the West, and beyond the frontiers of Nepal, Sikkim and Bhutan in the North. The main disturbance was, apparently, heralded by no minor fore-shocks. Within the innermost areas the damage included the collapse of old brick buildings and masonry monuments, the cracking of new and well-constructed masonry buildings, the dislocation of the piers and abutments of bridges together with the distortion of the railway lines over wide stretches; and the formation of fissures in the alluvium, accompanied by the spouting of sand and water both from these fissures and from the wells of the locality. It may perhaps seem remarkable that only one or two deaths caused by the fall of walls or buildings were recorded; but this was due to the fact that the epicentral tract, with the exception of the town of Dhubri,—which was extensively damaged,—comprises an area of sparsely populated country.

Associated with the Pegu earthquake of the 5th of May was the series of great shocks on the 3rd and 4th of December, the severest of which wrecked most of the masonry buildings in the town of Pyu and killed some 30 people. Examination of the area by Mr. Coggin Brown and Mr. Leicester led them to conclude that the epicentre lay a few miles to the West of Pyu. A railway line crossing this tract was severely damaged, and exhibited twisting of rails and displacement of embankments similar to those caused by the Swa shock in the previous year.

In the amount of space at our disposal it would be impossible for us to describe in detail the significance and results of the systematic surveys and economic enquiries which the Department had in hand during 1930, but if we enumerate them without comment the reader will at least be enabled to form some conception of the diversity, and also the numerical and geographical extent, of the Department's ordinary annual operations. As regards geological surveys, these were in progress in Keonjhar and Gangpur States,

and the Palamau District of Bihar and Orissa; in the Hukawng Valley, the Mogok stone tract of the Katha District, the Northern and Southern Shan States, the Shwebo District, and in Rangoon, in Burma; in the Chindwara, Nagpur, and Bhandara Districts of the Central Provinces; in the Northern Arcot District of the Madras Presidency; in the Kohat District of the North-West Frontier Province; in the Salt Range and the Attock District of the Punjab; in the Simla Hills; in Udaipur State; and in the Mirzapur District of the United Provinces. Work was also done on the Hazara-Kashmir syntaxis, and the Hazara-Simla Hills and the Udaipur-Idar correlations. As regards economic enquiries, amber was investigated in the Hukawng Valley, Burma; asbestos and barytes at Cuddapah, Madras; bauxite at Jeypore, Madras; building materials, such as stone and so forth, at Palamau, in Bihar and Orissa, at Shwebo in Burma, and at Hazara in the North-West Frontier Province; cement materials at Palamau; coal in the Hukawng Valley and at Shwebo in Burma; copper at Singhbhum in Bihar and Orissa; diamonds at Anantapur in Madras; engineering and allied problems at the Yin Chaung bridge site, Magwe, at the Pugyi reservoir, Insein, at the Taunggyi dam site, Southern Shan States,—all of which are in Burma,—at the Mangla regulator in Kashmir, at the Tungabhadra dam site in the Bellary District of Madras, and at the Shanan hydro-electric works and the Tikhal Khan dam site near Mandi, in the Punjab; gold in the Hukawng Valley and at Shwebo in Burma; graphite at Palamau; iron-ore at Keonjhar and Palamau, in Bihar and Orissa, at Bhandara, in the Central Provinces, and at Udaipur, in Rajputana; lead-ore at Ranchi, in Bihar and Orissa, at Mawson, in the Southern Shan States of Burma, and at Udaipur, in Rajputana; limestone at Thayetmyo in Burma; manganese-ore at Keonjhar, in Bihar and Orissa; mica at Palamau and Ranchi, in Bihar and Orissa; petroleum by the Resident Geologist in the Yenangyaung Oilfield, in Burma; pottery clay and pyrites at Shwebo, in Burma; salt in the Hukawng Valley and at Shwebo, and at the Mayo Mine in the Punjab; soap-sand at Shwebo; steatite at Udaipur; and water at Bassein and Rangoon, in Burma, and at Jhelum, Rawalpindi, and the Salt Range in the Punjab.

The Botanical Survey next claims our attention. The origin of systematized attempts to investigate the flora of India may be traced back to 1685, when Van Rheede was Governor of the Dutch possessions in Malabar; and botanical research has been continuously fos-

tered by the British administration since the appointment of Koenig as Government Botanist in Madras in 1778. But the most important centre for work in pure Botany has been not Madras but Calcutta, where the Royal Botanic Garden was started in 1786, as a result of the successful endeavours of Kyd to convince the Directors of the East India Company that organized botanical investigations were capable of yielding results of definite economic value.

As now constituted, the Botanical Survey is under the control of a Director who is also Superintendent of the Royal Botanic Garden. In addition, the Director is responsible for supervising the production and manufacture of quinine under State auspices in Bengal, Burma, and Madras, and the transference of *cinchona* products to the Government of India's area of distribution in Upper India. Apart from the Director, the Senior Staff of the Survey consists of two officers who are employed at headquarters on systematic work, and a Curator at the Indian Museum who is in charge of the Industrial Section.

The existence of the Botanical Survey, like that of the Geological Survey, has both a cultural and an économic justification. On general grounds it is obvious that a progressive Government should acquaint itself with the physical facts of the area it administers, and although, apart from its *cinchona* operations, the activities of the Survey cannot be said to have much immediate economic applicability,—consisting as they do of investigations and researches into the systematics, physiology, ecology, and histology of plant life,—the work accomplished in pure botany at the Royal Botanic Garden during the last century and a half has exercised a profound and far-reaching influence upon the development of Agricultural Science and Forestry in India. The exchanges of information and of personnel between the botanical establishment at Calcutta and the Agricultural and Forest Departments have throughout been of great value to all concerned, and even now, despite the progressive differentiation and specialization which is of necessity taking place, the relations of the Survey with these two organizations remain close and intimate. In addition, the Survey constitutes a rallying point for that large body both of official and non-official botanists who are adding to knowledge for its own sake; its rich library and magnificent collections render its co-operation necessary to the research-worker in a variety of ways, and it performs a valuable service to

the botanical free-lance by assisting in the arrangement and publication of the results of his labours.

During the calendar year 1929-30,—the latest period for which detailed information is available,—the field-work of the Survey, which until recently has been restricted owing to lack of funds and staff, was vigorously developed; its scope now extends from the North-Western and North-Eastern frontiers of India to the Southernmost points of the Peninsula and to the extreme limits of Burma in the South-East. As a result, botanical collections of great interest and variety are accumulating at headquarters so rapidly that the officers there have as yet had insufficient time to examine and classify them thoroughly, but new and valuable finds are frequently being made among them and added to the material already arranged in the Herbarium. Mr. Narayanswami achieved considerable progress early in the year in the task of investigating the material collected during the course of his tour in Southern India in 1928-29, and made several hundreds of systematic records. Mr. Srinavasan spent part of the period under review in examining the *flora* of the Garo Hill region and prepared a detailed note on the results achieved. Mr. Biswas was on tour in the Bombay Presidency at the beginning of the season, and towards the end began a special survey of the South Burma *cinchona* reserve area. Collections have been made in this region on several occasions, but it was felt desirable that a regular systematic survey should now be undertaken, especially in view of the fact that much less is known of the *flora* of Southern Burma than of the adjacent regions of Siam,—where the investigations of Dr. Kerr and Professor Craib have yielded most valuable results,—and of the Malay Peninsula; moreover the opening up of heavy jungle which accompanies *cinchona* cultivation provides the collector with an opportunity of working in a difficult tropical environment under unusually favourable conditions. The total number of specimens received in the Herbarium from all sources during the year was between 5,000 and 6,000; among them were items presented by the National Museum and the Smithsonian Institute in Washington, and by the Swedish State Museum. Numerous specimens were despatched to botanical institutions abroad, either on loan, or permanently, the recipients including the Department of Tropical Forest Botany at Oxford, the Herbarium in Kew Gardens, and museums in Stockholm and Berlin.

An interesting investigation upon which the Survey embarked during the year arose out of the fact that certain plants of the *Artemesia* genus in North-Western India yield the drug santonin, which has important medical uses as a vermifuge. Of recent years the extraction of santonin from these plants has assumed the dimensions of a small but promising industry, whose development however was handicapped by insufficient botanical and bio-chemical knowledge; for not only do some species of *Artemesia* yield much larger quantities of the drug than others, but the actual santonin-content of any one type varies considerably from season to season. Accordingly an officer,—Mr. Badhwar,—was specially deputed to advise upon the scientific problems with which the industry is confronted, and in particular to plot the distribution and prevalence of the highest-yielding varieties and the seasonal fluctuations in their santonin-content. The enquiry, it is believed, will occupy his time fully for a year at least.

Among the several publications of interest to the student of Indian botany which have appeared during the year, mention may be made of the paper by Father Blatter, issued in *The Indian Forester*, on the classification of Indian bamboos. The work is primarily systematic, but the great economic potentialities of bamboos in this country,—of which we have given some indication in Chapter III,—is sufficient to give it a wider importance.

One of the subsidiary functions of the Survey is to give information concerning the sources whence plants of economic importance and products thereof may be obtained, and during the year under review a considerable number of enquiries of this kind, both from India and abroad, were satisfactorily dealt with. In addition, numerous plants and other objects of vegetable origin were identified on behalf of Government departments and the general public. A comprehensive exhibit of *cinchona* and its products, with photographs explaining the methods employed in cultivation and details of manufacture, was placed on view to the public in the Health Welfare Exhibition held in Calcutta during March 1930.

At this stage some description of the arrangements with regard to the production and manufacture of quinine in India is desirable, since, as has already been explained, the Director of the Botanical Survey has certain functions in connection with it. At present the whole of the Government's policy in the matter is in a state of uncertainty, for the investigations made by the Royal Commission on

Agriculture, as set forth three years ago in their Report, raised a number of complex and far-reaching problems,—as, for instance, supposing the present methods of manufacture and distribution are satisfactory, to what extent it is possible to reduce the price to the consumer, whether India can become self-supporting in *cinchona* and dispense with imports, what exactly should be the respective functions of the Central and provincial Governments in connection with it, and whether the existing responsibilities of the Botanical Survey with regard to production and distribution should be maintained,—all of which are still subject to official consideration. The Commission urged that malaria in India cannot be effectively dealt with unless a *cinchona* department is established under the Central Government and made responsible for increasing the production of quinine, distributing it extensively throughout the country, and ensuring its sale at a cheap price. The centralization of operations connected with the production and distribution of quinine is, it may be mentioned, no new idea. Ten years ago a similar scheme was put forward, since the advisers to the Government of India at that time had been very much impressed by the way in which the incidence of malaria had been reduced in Italy by widespread distribution of quinine from a central source assisted by appropriate propaganda. But difficulties arising out of the establishment of the Montagu-Chelmsford Reforms caused the project to be abandoned. Moreover it should be borne in mind that although large tracts of land suitable for new *cinchona* plantations undoubtedly exist in India, cultivation is at present a risky proposition economically, as is clearly indicated by the fact that private enterprise has completely withdrawn from it. Even supposing that no untoward event from the point of view of production occurred after the substantial increase of planting advocated by the Commission was started, there are important financial considerations to be faced in connection with consumption. For if the Central Government, on behalf of all the Provinces and States, were to establish a general organization for producing abundant quinine, cheapness would only follow if the drug were freely used by the people. It would but stultify the plan were the Central Government to be left with increasing stocks for which no adequate demand was forthcoming, and as it is at present encumbered with a considerable quantity of quinine sulphate and *cinchona* febrifuge for which no satisfactory use can be

found the danger is obviously a real one. Clearly therefore, before the Government of India can consider itself justified in assuming full responsibility for the production and distribution of quinine, the whole problem requires the most careful examination from every possible point of view.

Under existing circumstances, however, the position is as follows. *Cinchona* plantations are maintained by the Government of Bengal at Mungpoo and Munsong in the District of Darjeeling, by the Government of Madras in the Nilgiris and the Anamalais, and by the Government of India at Mergui in Burma. The bark of the trees grown on these plantations, as well as the bark obtained from Java by the Government of India, is converted into quinine and its by-products at the factories at Mungpoo and Naduvattam, which are maintained by the Governments of Bengal and Madras respectively. During the year 1929-30 no bark was imported from abroad on Government's account, while the quantity harvested at their own plantations in Burma amounted to 149,749 lbs. The total quantity of bark belonging to the Government of India at the Mungpoo factory, including the stock lying over from previous years, was 543,932 lbs. (522,852 lbs. being Java bark and 21,080 lbs. Burma bark), of which 49,207 lbs. were worked during 1929-30, yielding 2,090 lbs. of quinine sulphate and 932 lbs. of *cinchona* febrifuge powder. At the Naduvattam factory in the Madras Presidency, where all the bark belonging to the Government of India is Java bark, the quantity worked was 17,067 lbs., which yielded 1,020 lbs. of quinine sulphate and 288 lbs. of *cinchona* febrifuge. The quantity of bark harvested from the two *cinchona* plantations belonging to the Government of Bengal was 1,130,402 lbs. The quantity of dried Bengal bark used in the Mungpoo factory was 1,062,806 lbs., from which 29,050 lbs. of crude quinine sulphate, approximately 13,000 lbs. of purified quinine sulphate, 15,681 lbs. of *cinchona* febrifuge, 4,347 lbs. of *cinchona* febrifuge tablets, and 726 lbs. of other quinine salts were manufactured. The bark belonging to the Madras Government used at the Naduvattam factory amounted to 519,133 lbs. This resulted in the manufacture of 21,434 lbs. of quinine sulphate and 15,161 lbs. of *cinchona* febrifuge. The following table shows at a glance the quantities of bark used,

and of the quinine sulphate and *cinchona* febrifuge produced at the two factories:—

	Bark used.	Quinine sulphate.	Cinchona febrifuge.
Mungpoo factory—			
1. Government of India .	49,207	2,090	932
2. Government of Bengal .	1,062,801	42,050	20,079
Naduvattam factory—			
1. Government of India .	17,067	1,020	288
2. Government of Bengal .	519,133	21,434	14,873
TOTAL .	1,648,213	66,594	36,172

The quantities of the two drugs issued during 1929-30 are give below:—

	Quinine sulphate.	Cinchona febrifuge.
From Government of India stock .	23,312	*Nil.*
From Bengal stock	21,999	16,088
From Madras stock	29,008	5,375
TOTAL .	74,319	21,463

The actual receipts of the Government of India from the sale of quinine during 1929-30 were Rs. 567,798, which more than covered the total expenditure. It has on its hands, however, a large accumulation of quinine sulphate and *cinchona* febrifuge,—for which, as we have seen, it has hitherto been unable to discover purchasers.

The Zoological Survey of India was established in 1916, when the Zoological and Anthropological Section of the Indian Museum was converted into a Survey on a basis similar to that of the Geological and Botanical Surveys. The Indian Museum itself dates back to 1875, and at the outset its zoological and anthropological collections consisted almost entirely of material handed over by the Asiatic Society of Bengal, whose members had been accumulating collections since 1814. Organized zoological investigation in India has thus been in continuous progress for the last 117 years. From the foundation of the Museum in 1875 to the time when the Zoological and Anthropological Section was established in 1916 as a separate Survey, the Curator (or as he was subsequently termed, the Superintendent) of the Indian Museum has always been a zoologist,

and among the officers who have held the appointment have been such well-known workers as Anderson, Wood-Mason, Alcock and Annandale. At the time when the Museum was opened the Government of India created the appointment of Surgeon-Naturalist to the Marine Survey, and provided that the collections made by the Survey ship " Investigator " should be housed in the Indian Museum. In 1916, when it was first started, the staff of the Zoological Survey consisted of only four officers,—the Director, one Superintendent, and two Assistant Superintendents,—but during the intervening years there has been an increase, and at the present time there are seven officers,—the number of Assistant Superintendents having been increased to five, one of whom is an anthropologist. With the exception of the present Director, all the officers are now Indians. The main functions of the Survey are to investigate the fauna of India both in the field and in the laboratory, and to arrange and preserve the research collections, and those exhibited to the public in the zoological and anthropological galleries of the Indian Museum. In addition the Department issues two series of publications upon zoological research, namely the *Records* and the *Memoirs* of the Indian Museum. One volume of the *Records* is produced yearly, while issues of the *Memoirs* appear from time to time as circumstances require. Another important feature of the Survey's activities is the work it achieves in co-operation with other scientific bodies,—particularly the Archæological Survey.

As regards the field investigations of the Zoological Survey, every officer in the Department is expected to be on tour for some two or three months in each year, and more protracted tours are undertaken from time to time for special purposes. During the year under review a number of tours were made to various hilly regions in connection with a special study of the fauna of hill streams which has recently been undertaken. Investigations have also been started regarding the changes that occur in the fauna of streams and rivers as they approach the sea and the salinity of the water increases. A number of observations have been made locally in those parts of the Hooghly River where the admixture of fresh and salt water causes changes of this kind, and a party was also sent to the Salt Range in the Punjab to study the fauna of streams that traverse this region and become markedly saline while doing so.

It will be recollected that, in our previous Report, we described how the services of the Survey had been requisitioned in connection with certain problems arising out of fisheries in the Andaman Islands. For some years past Japanese divers have been in the habit of coming up to the Andamans in motor boats from Singapore to procure the shells of the molluscs *Trochus* and *Turbo* for use in the mother-of-pearl button industry, and it was feared that, unless suitable steps were taken, serious overfishing might occur and a permanent source of income be consequently destroyed; on the recommendation of the Director of the Survey the Government of India has now appointed a special Research Officer and an Assistant to study these fisheries for the next five years, and it is hoped that as a result it will be possible to establish the fisheries on a proper economic basis.

During the year several important pieces of research work were completed in the laboratories and a number of other interesting investigations are still in progress. Among the more important papers that have been published may be mentioned *Further Notes on Bopyrid Isopods Parasitic on Indian Decapoda Macrura*, and *Pelecypoda of the Indawgyi Lake and of its connected fresh water areas in the Myitkyina District, Upper Burma*, which were published in the *Records of the Indian Museum*, and *A Revision of the Asiatic Species of the Genus Corbicula: IV. The species of the genus Corbicula from the Sunda Islands, the Celebes and New Guinea* and *Studies on Indian Jassidae (Homoptera). Part I—Introductory, and Description of some new genera and species* published in the *Memoirs of the Indian Museum.*

Throughout the period the laboratories and the library were made use of by numerous visitors, among whom special mention may be made of Professor A. Pearse of Duke University, Durham, U. S. A., and Professor J. Percy Moore of Pennsylvania University, Philadelphia, U. S. A. The total number of visitors was slightly less than during the previous year, but 33 outside workers came to consult the library and of these 12 also made use of the laboratories in connection with their research work. Under the present system permission to borrow books from the library is extended to all zoological research workers in India who hold a recognized appointment and during the past year over 300 books have been sent out.

The Anthropological Section continued to co-operate with the Archæological Survey in examining the human remains discovered at Mohenjodaro and Harappa. An interesting investigation was also begun in connection with the 1931 Census, the Department having initiated an anthropometrical survey of the Brahmins of India from which some useful results are expected to be obtained. A considerable number of fish were identified during the year for the Harcourt Butler Institute of Rangoon and the Bose Institute, Calcutta. Some interesting additions were also made to the exhibits in the public galleries, including 15 ethnological specimens, 12 mammalian, 9 avian, and 2 reptilian; in addition a special group of the birds of the Darjeeling District has been prepared for exhibition. A general reorganization of the Fish Gallery was undertaken during the year, which it is hoped will considerably improve this portion of the Museum.

We have now briefly summarized the recent achievements of the Archæological, Geographical, Geological, Botanical and Zoological Surveys, and in previous Chapters we saw something of the work undertaken by the Government in other branches of applied science, such as Medicine, Meteorology, Agricultural and Veterinary Science, and Forestry. Throughout the remainder of this Chapter we will endeavour to describe the development of various other scientific activities throughout the country with which the Government is not so directly concerned, but which nevertheless are undoubtedly relevant in a review of the country's moral and material progress.

Mention was made in our last Report of the important researches which Sir C. V. Raman, F.R.S.,—who holds the Palit Chair of Physics at Calcutta University,—and the group of young physicists and chemists associated with him have accomplished during recent years in Calcutta at the Indian Association for the Cultivation of Science. The most important work of these investigators has, of course, been that upon the radiation phenomenon known as the Raman effect, which is a peculiarity of light,—whose significance was first appreciated by Sir C. V. Raman,—which occurs when transparent substances are illuminated from a mercury lamp or other suitable source, and the scattered rays are photographed through a spectroscope. The implications of this phenomenon continued during the year to receive world-wide attention. Indian physicists, not only in Calcutta, but also in other centres of research

such as Madras, Bangalore, Dacca, Nagpur and Bombay, naturally exhibited particular interest in the subject, and made several fresh contributions to it; no less than four special numbers of the *Indian Journal of Physics* were published during the year containing papers exclusively devoted to discussing various aspects of it. Amongst the more prominent workers in this field were Mr. S. Bhagavantam and Dr. P. Krishnamurti. The former published studies of the Raman spectra of numerous elements and compounds, and attempted to correlate them with molecular form and structure; his work brought out very clearly the importance of determining the state of polarisation of the Raman radiations, and indicated how the method enables such phenomena as molecular association and polymerisation in liquids to be followed. Dr. P. Krishnamurti devoted his attention to studying the chemical implications of the radiations, and developed a special technique whereby substances which are available only in the state of crystalline powder can be conveniently investigated; a very large number of substances, when examined in this way, indicated the existence of a remarkable relationship between the nature of the chemical force and the intensity of the lines in the Raman spectra. Among other investigators who secured interesting results during the year from researches in this subject may be mentioned Mr. S. Venkateswaran, who obtained exact data for a large number of organic liquids, and Mr. S. C. Sircar, who studied the relation of this new type of light-scattering to that which had previously been known. The total number of papers dealing with the Raman effect which have been published since it was originally observed amounted at the time of writing to well over 500. The far-reaching importance of the discovery obtained suitable international recognition during the year in the award to Sir C. V. Raman, by the Swedish Academy of Sciences at Stockholm, of the Nobel Prize for Physics. This was preceded by the presentation to him a week earlier of the Hughes Medal by the Royal Society of London. The Nobel award, which incidentally has considerable monetary value, is generally considered to be the highest international honour which a man of science can hope to obtain, and the fact that both this prize and the Hughes Medal were conferred during one year on Sir C. V. Raman greatly enhanced the prestige of unofficial scientific research in India generally,—particularly as the awards were the first of their kind which have

ever been made to a scientific investigator not of European origin. Sir C. V. Raman also received during the year the honorary LL.D. degree of Glasgow University. As regards the other branches of Physics, spectroscopy,—apart from its application in the study of the Raman effect,—is a very favourite subject with Indian investigators. Among the workers in this field may be mentioned those conducting research under the guidance of Professors M. N. Saha, F.R.S., at Allahabad, B. Venkatesachar at Bangalore, and P. N. Ghosh at Calcutta. The study of magnetism also claims many enthusiastic followers, amongst whom may be mentioned Professor D. M. Bose and his students at Calcutta, Mr. K. S. Krishnan at Dacca, Professor S. S. Bhatnagar and Dr. V. I. Vaidyanathan at Lahore, and Dr. S. Ramachandra Rao at Chidambaram. Wireless research is being pursued on a modest scale at Calcutta, Allahabad and Bangalore; and X-Ray research has many devotees, notably Dr. P. Krishnamurti, Mr. S. C. Sircar and Dr. K. Banerji at Calcutta, and Professor Mata Prasad at Bombay. A variety of other subjects, such as acoustics, electro-optics, magneto-optics, and atmospheric electricity, have received attention recently from non-official workers in different parts of the country. The *Indian Journal of Physics* conducted by Sir C. V. Raman contains papers on all these branches of physical research.

In Chemistry, also, there was a steady improvement in the quality and output of work during the year under review. Papers on almost all the important enquiries conducted in India are published monthly, in the *Journal of the Indian Chemical Society*,—a periodical which is run on approximately the same lines as the *Journal of the Chemical Society of London*, with which it does not compare altogether unfavourably either in the quality or the number of papers produced. Another publication devoted mainly to articles on Chemistry is the *Journal of the Indian Institute of Science* at Bangalore; but although some important papers have appeared in this Institute's Journal from time to time, they have been relatively fewer in number. Certain Indian workers still prefer to send their results for publication to foreign scientific journals, but this practice is becoming less prevalent. Further indication of the volume of work carried on by chemists in India can be derived from the fact that at least 300 papers are submitted annually to the Chemistry Section of the Indian Science Congress. Practically

every branch of the subject,—that is to say, organic, inorganic, physical, analytical, and agricultural chemistry, as also bio-chemistry, has received attention from Indian workers in various parts of the country. In organic chemistry, especially, the centres of work are many, those at Calcutta, Cuttack, Bangalore, and Baroda being, perhaps, the most important, and numbering among their workers men such as Professors P. C. Mitter, B. K. Singh, P. C. Guha, and K. G. Naik. The study of natural products and their synthesis is probably the most useful line of research pursued by the Calcutta school, and investigations of a similar kind have also been undertaken at Bangalore. The study of organic compounds in relation to their optical rotatory power was continued during the year by Prof. B. K. Singh and his collaborators at Cuttack. Among other work of general interest was an important study of tautomerism by Dr. Qudrat-i-Khuda. In organic chemistry, several important contributions to knowledge have been made by Indian workers, especially by Dr. P. B. Sarkar at Calcutta on complex salts and on the constitution of thio-sulphuric acid. As regards analytical chemistry, valuable work has recently been achieved in the use of special micro-chemical re-agents in analysis, and a new method for the gravimetric estimation of the alkali metals has been discovered. In physical chemistry, there are, as in organic chemistry, numerous research centres. In addition to the studies of the chemical implications of the Raman effect, which have already been briefly referred to, and which have thrown light on a variety of problems,—such as the nature of the chemical bonds in molecules,—important investigations into other aspects of this branch of the science have been carried out by Dr. S. S. Bhatnagar and his fellow-workers at Lahore, Prof. Mata Prasad at Bombay, and Dr. N. R. Dhar at Allahabad. Investigations of magnetic properties in relation to the structure of molecules constitutes the main subject of study at Lahore. At Bangalore the reactions taking place at the surface of hot metallic filaments has been worked out in detail by Mr. B. S. Srikantan. Researches on the colloids have been carried on by Dr. J. N. Mukherji at Calcutta and Prof. Mata Prasad at Bombay. At Allahabad, the study of photochemical reactions has been the most important line of research. From this brief summary, it will be apparent that among the various branches of this particular science, the work done in organic chemistry in India has been

mainly directed to the investigation of natural products and their synthesis, in inorganic chemistry to the study of complex salts, and in physical chemistry to the application of the Raman effect, of magnetic properties, optical activity, and X-Ray diffraction to the ordinary problems of chemical constitution. Mention must in addition be made of the work on agricultural chemistry and bio-chemistry which has been specially undertaken in the Indian Institute of Science at Bangalore by Dr. V. Subrahmaniam and his fellow workers. The fresh knowledge obtained, especially from the study of soil bacteria and of the lac insect, will, it is hoped, yield important practical results.

Research in mathematics continued to be fairly vigorously conducted at most of the Universities in this country. Most of the investigations in applied mathematics tend to be done in Calcutta and Dacca, while work on pure mathematics is specially favoured at Madras and some of the North Indian Universities, particularly Lahore. The most important indigenous periodicals in which the results of mathematical research are published are the *Journal of the Indian Mathematical Society*, and the *Bulletin of the Calcutta Mathematical Society*. Six numbers of the former publication appear every year; the Calcutta Society issues its Bulletin quarterly. Indian workers, however, still frequently send their best work to foreign mathematical periodicals,—owing in some measure to the difficulty of obtaining prompt publication in India for all the work achieved. Amongst the more noteworthy events in the mathematical world during the year was the publication by Prof. Shyamadas Mukherji, of Calcutta University, of a volume of his collected papers on pure geometry, which received very favourable notice from leading mathematicians abroad. Among other Indians who have to their credit work of high quality in pure mathematics are Dr. Vaidyanadhaswamy of Madras University, Dr. T. Vijayaraghavan of Aligarh and Dr. S. D. Chowla of Lahore. Prof. Ganesh Prasad of Calcutta University produced the first volume of a book on *Spherical Harmonics* during the year. The work of the late Mr. S. Ramanujan, F.R.S.,—perhaps the most brilliant mathematical thinker India has yet produced,—continues to receive much attention from Indian and British authorities, and Prof. G. N. Watson and Mr. C. T. Preece have lately brought out a series of memoirs discussing certain of Ramanujan's theorems. As regards

applied mathematics, Prof. Nikhil Ranjan Sen of Calcutta University and Dr. Nalini Mohan Basu of Dacca University have written valuable papers recently.

During the year under review much useful research was done in the zoological sciences, including morphology, anatomy, cytology, embryology, and the systematics of various groups of animals from the protozoa to the primates. Considering the volume of work that is undertaken, the number of periodicals devoted to Zoology in India is small, and many of the papers produced have to be sent to Europe for publication and consequently tend to appear somewhat late. During 1930, however, interesting and in some cases original contributions to zoological knowledge continued to appear in India in the publications of the Asiatic Society of Bengal and the Bombay Natural History Society, and also in the scientific journals issued by the Universities of Calcutta, Allahabad, Madras and Mysore. Workers in isolated *mofussil* colleges, and to a lesser extent also those in the majority of Indian Universities, continue to experience difficulties in obtaining access to modern zoological literature and works of reference outside the scope of their own particular subjects, and the field of research in most centres is therefore somewhat restricted. This, however, at least has the advantage of ensuring a steady flow of specialized work in individual branches of the subject. To those interested in Zoology in Calcutta, the fairly extensive library of the Zoological Survey of India is available, and, as we indicated in our previous Report, is being increasingly resorted to by recognized workers from other parts of the country. As regards the work achieved by private investigators during the year under review, there are several items which deserve mention. In systematics, the hitherto neglected group of the protozoa has received attention from Prof. B. L. Bhatia, of Hoshiarpur, in the Punjab, who has worked out a very useful synopsis of the classification of the haplocyte gregarines, and an interesting account of the protozoan fauna of Kashmir; while Dr. H. N. Ray of Calcutta has made investigations into the life-history of certain little-known sporozoan parasites of the marine worms. A substantial amount of work has also been done in the helminthic fauna of India,—Prof. H. R. Mehta and S. C. Verma and their collaborators in Allahabad, Prof. G. S. Thapar in Lucknow, Prof. M. A. Moghe in Nagpur, Prof. Meggett in Rangoon and Dr.

Maplestone in Calcutta having added considerably to our knowledge of the group during the year. The large number of new species of parasitic helminths from a variety of hosts which have recently been discovered and described clearly demonstrates that helminthology has in the past been somewhat neglected in India, and the subject is, of course, of considerable economic importance, not only from the medical and veterinary points of view, but also to the fishery industry. Two volumes on *The cestode parasites of India* were published by Dr. Southwell in *The Fauna of British India* series during the year. In cytology, Prof. Vishwanath and his collaborators in Lahore, Prof. Bhattacharya in Allahabad, and Prof. Asana in Ahmedabad have made important contributions to the study of oogenesis in various species, both vertebrate and invertebrate, which throw fresh light on the structure of the golgi elements and the nature of their contents. The evidence brought forward clearly shows that the function of the golgi elements in oogenesis is primarily if not exclusively nutritive. As regards vertebrate morphology and embryology, there have also been some notable advances. Prof. H. K. Mukherjee of Calcutta has undertaken some interesting studies of the development of the vertebral column in amphibians, and Prof. C. R. Narayana Rao of Bangalore has obtained important results from investigating the brain-structure of certain engystomatid frogs. In a series of papers entitled *Contributions to our knowledge of the anatomy of the Lemuroidea*, Dr. Subba Rau and his collaborators at Mysore have given an excellent account of the arterial and urino-genital systems, and of the skull-structure, of the South Indian lemur *Loris lydekkerianus*, which support the view that the lemurs should be considered to occupy a lowly position, from the evolutionary point of view, in the primate group. Dr. Subba Rau had previously obtained embryological evidence suggesting the same conclusion. In entomology, Mr. D. Mukherjee of Calcutta has published a valuable memoir on the respiratory system of the larva of the acquatic beetle *Cybister*, while Mr. Negi and his collaborators in the Indian Lac Research Institute near Ranchi have investigated predators of the lac insect and suggested methods of control. Mr. B. Krishnamoorti of Mysore has contributed to our knowledge of the plant-lice (*Aphidae*) of Mysore. Other interesting items of work accomplished during the year has been the publication by Prof. Gates of Judson

College, Rangoon, of the first part of his studies of the earthworms of Burma. Prof. R. Gopalaiyyar and his collaborators in Madras have made good progress with their investigation of the littoral fauna of Madras, particularly in so far as the polychaete worms, medusae, and plankton are concerned. In the third part of the Indian Zoological Memoirs edited by Prof. Bahl of Lucknow,—which incidentally have began to play a very important part in the teaching of zoology in the Universities and Colleges,—Prof. P. R. Awati and Prof. H. S. Rai of the Royal Institute, Bombay, have given an exhaustive account of the Bombay oyster (*Ostrea cucullata*). The mammal and bird survey of the Eastern Ghats which the Bombay Natural History Society has recently undertaken, and which was referred to in our previous Report, has not been completed, but preliminary accounts of the birds have been published by Mr. Kinnear and Mr. Whistler, and of the monkeys by Mr. R. I. Pocock, of the British Museum. Sir Reginald Spence and Mr. S. H. Prater, of the Bombay Natural History Society, have issued an article on the fish-supply of the West coast, based on their experience of fisheries in the neighbourhood of Bombay, in which they suggest that the fishing industry has better chances of thriving if private effort is reinforced by continuous organized research supported by Government. Among other interesting papers produced during the year on zoological subjects were those by Mr. A. P. Mathew on voluntary colour-change in the eyes of a spider; by Mr. C. P. Gnanamuthu on the mechanism of the throat-fan of a ground lizard; and by Mr. R. V. Seshaiya on the anatomy of the fresh-water snail *Mysorella castigera*.

A considerable amount of research was accomplished in India during the year in the various branches of Botany, including morphology, anatomy, physiology, embryology, cytology, pathology and teratology, ecology, and systematics. Most of the work done by non-official investigators is nowadays published in the *Journal of the Indian Botanical Society*,—though foreign journals are still used to a considerable extent also. As in Zoology, research in Botany is much handicapped,—except in Calcutta,—by the lack of adequate library facilities, and the idea of publishing a catalogue of up-to-date botanical literature for the assistance of workers who live in the remoter parts of the country has had to be abandoned, at any rate for a time, owing to financial difficulties. In morphology

the chief event was the publication by Prof. B. Sahni and Mr. T. C. N. Singh of Lucknow of an important paper on the vegetative anatomy and female cones of *Fitzroya patagonica*. Among other papers dealing with this branch of Botany that were issued during the year, mention may be made of those of Mr. P. Maheshwari on the morphology of *Boerhaavia diffusa*, of Prof. R. H. Dastur and Mr. C. A. Kapadia of the Royal Institute, Bombay, on the anatomy of climbing plants, of Dr. H. Chaudhuri and Mr. A. R. Akhtar of Lahore on the roots of certain *Cycadaceae* and the root-tubercles of *Podocarpus chinensis*, and of Mr. T. C. N. Singh on the morphology of the pollen grain. In physiology, the most important paper published was that of Prof. Inamdar and Mr. Dabral of Benares on the daily water-balance of plants in arid regions. Other papers were those of Prof. R. H. Dastur and Miss E. Baptista on the osmotic and suction pressure of the rice plant, and of Mr. R. S. Malhotra on certain peculiarities of germination. Some further papers were communicated to the Botany Section of the Indian Science Congress but have not as yet been published. A large number of articles were issued on the cytology and embryology of plants. Important papers dealing with the female gametophyte were those of Prof. Agharkar and Mr. Banerji, of Calcutta, on the development of the embryosac in *Carica papaya*, and of Mr. P. Maheshwari and Mr. N. B. Singh on the female gametophyte of *Asphodelus tenuifolius*. The microsporogenesis of *Cassia didymobotrya* was studied by Mr. M. L. Sethi, of Multan, and that of *Raphanus sativus* by Mr. R. N. Sutaria; Mr. N. S. Rau, of Udipi, investigated the reduction-division in the pollen-mother-cells of *Cyanotis cristata*. This branch of Botany is as yet in the descriptive stage, and some time must elapse before sound generalizations can be made from the facts ascertained. Systematic Botany is a subject which can only be satisfactorily dealt with in places where large collections of properly classified material are available, which is not the case, as yet, in any of the Indian Universities. Nevertheless, the amount of important systematic work recently done in India is substantial. For example, Dr. F. Börgesen's papers on the marine algæ of India, which hitherto have been very imperfectly investigated, have attracted a good deal of attention, and he has been asked by the Universities of Bombay and Madras to train workers in this branch of Botany. Among other interesting papers

on systematic botany recently produced have been those of Dr. S. L. Ghose on the *Myxophyceae*, Prof. S. L. Ajrekar and K. Dharmarajulu on the *Mucorineae* of Bombay city, Prof. J. H. Mitter and Mr. R. N. Tandon on the fungus flora of Allahabad, Prof. P. Brühl, of Calcutta University, of Indian mosses, Prof. Kashyap on the abnormal cones in *Equisetum debile*, the Rev. Dr. E. Blatter and his associates on certain flowering plants, and Prof. Agharkar and Mr. I. Banerji on pollination and seed formation in the water-hyacinth. Among the papers dealing with plant pathology must be mentioned that Dr. V. N. Likhite, of Baroda, on the virus diseases of the tomato. A number of papers on teratology have also been published. At the last session of the Indian Science Congress, in Nagpur, about a hundred papers dealing with the various branches of Botany were read. A joint discussion was held with the zoologists on the place of biology in education. The number of zoological papers read at the Congress was about seventy.

In Geology, among the studies during the past two years by non-official workers which are likely to prove of economic value are those of Mr. C. Mahadevan of Calcutta on the X-Ray analysis of coal, undertaken as a result of a suggestion from the Geological Survey. These researches seem to have given access to a new field of investigation in which the constitution of coals and their geological environment and history can be interestingly correlated. Mr. N. N. Chatterjee of Calcutta has been working on the sulphur forms in Indian coals, and has also been investigating the action of different solvents on coal, in order to reveal the relationship between the constitution of coals and their coking properties. Several studies on the geology of limited areas have been undertaken by the professors and students of the Universities and colleges, and among the papers recently published have been those on the Chhidru Hills by Prof. Mathur and Mr. Bajpai, on the Vizagapatam Harbour area by Mr. C. Mahadevan, and on Khilchipur State by Mr. D. P. Chandoke. As regards petrology, the most important recent investigations have been those of the igneous rocks from the Girnar Hills in Kathiawar,—and also of the lavas and igneous rocks from Cutch,—by Prof. Mathur and his associates; of the metamorphic rocks of the Chor peak in the Simla hills by Mr. N. N. Chatterjee; and of the occurrence of serpentine rocks in Burma by Mr. Ramamirtham. Several short papers on palæontology have been read

recently at the meetings of scientific societies, chiefly by members of the geological staff of Mysore, Calcutta and Benares Universities, and of the Dhanbad School of Mines. The materials described were collected from Rajmahal, Jubbulpore, and various other places. Some of the above papers have been published in the *Quarterly Journal of the Geological, Mining and Metallurgical Society of India*. In the XXIV volume of the *Transactions of the Mining and Geological Institute of India*, Dr. C. S. Fox has described the rise of the Jharia coalfield and Mr. R. R. Simpson has discussed its future; Mr. D. N. Wadia and Lt.-Col. L. M. Davies have discussed the age and origin of the gypsum associated with the salt deposits of Kohat, and Dr. E. Mackenzie Taylor, of Cambridge, the influence of roof conditions on the bacterial decomposition of organic matter with special reference to the formation of coal; Mr. F. B. Kerridge has described the results of experiments made in the course of working and developing a kaolin deposit near Chaibassa, in the Singhbhum District of Bihar and Orissa. In the XXV volume is included a description of the mineral resources of Madras, Mysore and Travancore by Mr. V. S. Swaminathan, and some suggestions concerning the utilisation and conservation of Indian coal by Mr. C. H. McCale.

In Anthropology, the leading non-official worker in this country is Rao Bahadur L. K. Ananthakrishna Iyer, Lecturer and Chairman of the Board of Higher Studies in Anthropology at Calcutta University, the importance of whose work in connection with the Ethnographical Surveys of Cochin and Mysore is widely recognized. Amongst his numerous publications, are two sumptuous volumes on the Ethnography of the Cochin Tribes and Castes, a book on the Anthropology of the Syrian Christians, and his University Lectures on Ethnography. He has been entrusted with the work of conducting the Mysore Ethnographical Survey, the results of which are to be brought out in four volumes, two of these have now been issued, and the third, at the time of writing, was nearly ready for publication. Although nearly seventy years of age, he is continuing his work with indefatigable energy, and expects to complete his fourth volume on the Mysore Survey during 1931.

In the various branches of applied science, such as Medicine, Agriculture, and Veterinary Research, there is not much non-official activity to report. Some of the private medical institutions

such as the Belgachia Medical College at Calcutta and the Govardhandas Sunderdas Medical College at Bombay, however, are reported to be encouraging research work by the members of their teaching and hospital staff, and it is to be hoped that in our future Reports there may have been some achievements worthy of note to be recorded. The latter of these two colleges is financed by the Indian Research Fund Association. Many University teachers in India who are interested in the agricultural sciences have recently undertaken research programmes under the auspices of the Imperial Council of Agricultural Research, and it is understood that the work they accomplish will be published in the Indian Journal of Agricultural Science, on whose editorial staff a few individuals who are not Government employees have recently found a place.

We may conclude this Chapter by mentioning an interesting step which was taken during the year towards co-ordinating the work of official and non-official workers in scientific and other educational matters in this country, and ensuring closer intellectual contact between India and the rest of the world. For some time, the Government of India has had under consideration the possibility of bringing into existence a special committee to keep in touch with the Organization for Intellectual Co-operation established by the League of Nations. To constitute a committee which would be genuinely representative of the diverified intellectual organizations in this country would, it is generally recognized, take some time, but meanwhile it is obviously desirable that the Government of India should co-operate with these particular activities of the League of Nations so far as lies in its power. Accordingly, the Educational Commissioner with the Government of India has been appointed Correspondent with the Secretariat of the International Committee of the League, and with the Director of the International Institute of Intellectual Co-operation at Paris. In this capacity, he will act as intermediary between the International Committee and the various intellectual organizations, including the Ministries of Education, in India, assist in any enquiry into the conditions of intellectual life in India which may be undertaken by the International Committee, transmit to the Secretariat of the International Committee any requests which he may receive from intellectual institutions and workers in India, as, for example, for books and instruments, travelling facilities, or

inter-University exchanges, and comply as far as possible with requests of the same nature which he may receive either from the Secretariat of the International Committee or directly from National Committees in other countries. Another development, of a not dissimilar nature,—though in this case specifically confined to scientific matters,—has been the recent decision that India should join the International Research Council,—now called the International Council of Scientific Unions,—and its allied Unions of Geodesy and Geophysics, Geography, Astronomy, the Biological Sciences and Radio-Telegraphy. During the year under review she was admitted to the membership of the Research Council and the Union of Geodesy and Geophysics, and steps were taken to secure her admission to the other Unions as soon as possible. Until such time as a National Council and National Committees are formed to adhere to and co-operate with the International Research Council and its Unions, the intention is that the Government of India shall act as the intermediary in the matter. The International Research Council was constituted soon after the war on the initiative of the representatives of the Allied Powers, and discharges its scientific duties through the various Unions which have been formed for the different groups of science, which, in addition to those enumerated above, include Unions of Chemistry, Physics, and Mathematics. These bodies are doing great service for the advancement of their subject. The international meetings which take place under their auspices bring scientists together who have been working in different parts of the world, and enable them to exchange ideas and establish friendships which render collaboration more intimate and more informed. The participation of India in these activities is bound to be of advantage to her scientific workers, both official and non-official.

CHAPTER IX.

The Provinces.

People who have never been in India,—and particularly those who live in European countries where a unitary system of administration prevails,—sometimes find it difficult to grasp how the functions of the Central and Provincial Governments here are differentiated. In this Chapter,—our last,—we will be dealing for the first time solely with the activities of the provincial Governments, and in view of the misunderstandings which are liable to arise on the subject, we must endeavour, at the outset, to define what those activities consist in, and how the provincial Governments came to undertake responsibility for them. To do so is the more necessary on this occasion, since, by the time our next Report is issued, the system under which the country has been administered during the period now under review may have been radically altered.

Before the Government of India Act of 1919 was passed and what are known as the "Montagu-Chelmsford" Reforms were introduced as a result of it, the supreme executive and legislative authority in this country,—despite the tentative changes in the direction of strengthening the provincial administrations which were effected under the Indian Councils Acts of 1861 and 1892 and the "Morley-Minto Reforms" of 1909,—remained vested in the Central Government. In the last resort, therefore, and except for minor details, the provincial Governments were entirely subordinate to the Centre,—being indeed in the position of mere agents through which its over-riding jurisdiction was exercised. The essence of the changes introduced in 1919 may be said to have consisted, firstly, in the definite transfer, under what are known as the Devolution Rules, of responsibility for certain administrative subjects from the Government of India to the provincial Governments, and, secondly, of the sub-division of such subjects as were delegated to the provincial Governments into two groups,—one of which was "reserved" within the control of the Governor working with Executive Councillors appointed by the Crown, and thus responsible, ultimately, to the Secretary of State and to the British Parliament and people, while the other was "transferred"

to the Governor working with Ministers selected from members of the provincial legislature, and responsible, through that body, to the Indian electorate. Of the subjects over which the Government of India retained control the most important were Military and Foreign Affairs, Tariffs and Customs, Railways, Posts and Telegraphs, Income-Tax, Currency and the Public Debt, Commerce and Shipping, and legislation relating to Civil and Criminal Law, while those delegated to the provincial Governments generally speaking included Law and Order, Land Revenue, Irrigation, Forests, Local Self-Government, Medical Administration and Public Health, Education, Public Works, Agriculture, Fisheries, Industries, Co-operative Societies, Registration, and Excise. Of these latter subjects, that is to say those for which the provincial Governments were given responsibility, the first four, namely, Law and Order, Land Revenue, Irrigation, and Forests, fell within the first of the two groups to which we have referred and constituted the "reserved" subjects, while the remainder were "transferred" to Ministers answerable to the Provincial Legislature.

This brief summary should have been sufficient to indicate the essential features of the constitution under which India has continued to be governed during the period under review, and we may now proceed to describe the more important events that occurred in connection with the administrative heads for which the provincial Governments are responsible, taking the "reserved" subjects first; and since it has been found more convenient to treat two of these subjects, that is to say, Forests and Irrigation, in an earlier portion of this book,—namely Chapter III,—there only remain Law and Order and Land Revenue to be considered before we pass on to examine those aspects of public affairs over which the Indian electorate now has,—except for the emergency powers which remain vested in the provincial Governors,—been for ten years directly responsible.

The existing police organization in India has been evolved out of the force which was established in Sind by Sir Charles Napier in the Forties of last Century, and modelled on the Irish Constabulary of those days. Except in the Presidency towns, which have their own Police Acts, the police all over India are now organised, disciplined and controlled according to the provisions of the Police Act of 1861, and by Rules made thereunder by provincial Govern-

ments to suit local conditions, or by separate provincial Police Acts. Each Province recruits its own police force, the administrative head of which is the Inspector-General, who has under him a number of other officers holding the rank of Deputy Inspector-General. The force is divided among the Districts of the Province, each District force being under the control of a Superintendent of Police who is a member of the Indian Police Service and responsible for its discipline and organization. Every District is divided up into a number of police station jurisdictions each in charge of a "Station-house Officer", who is usually of the rank of Sub-Inspector. The police station, or *thana,* is the basic working unit of the Indian police system. As a general rule the Sub-Inspector at the *thana* is the first officer to receive a report of any serious crime committed within his jurisdiction, and upon him devolves the duty of investigating these reports as well as those cases sent to him by a Magistrate, and, if possible, of bringing the offenders to justice. This officer's duties are however far from being limited by his work of reporting and investigating crime; in many parts of India he is the only representative of the Government for miles around, and almost everything that happens within his jurisdiction concerns him to some degree.

Although the Indian police force, in its standard of efficiency, is thoroughly modern, it nevertheless contains certain indigenous elements of great antiquity. Over practically the whole of India, for example, the old pre-British village watchman, or *chaukidar,* still exists. His first duty is to report crime, but like the *thanadar,* his functions are many and varied, and include the arrests of offenders, general aid to the police, surveillance over bad or suspected characters, and the general supply of local information, particularly when an investigation is being held into a crime in his own village.

For English readers the word "police" conjures up a vision of the typical Borough force with its members serving permanently within comparatively narrow confines; or of the country constabulary with the rural policeman stationed in his little country village and covering a beat of a few square miles of country side. But the arrangement in India is different. In the three Presidency towns of Calcutta, Madras and Bombay, and also in Rangoon, the police are, it is true, organized as a separate force under the command of a Commissioner of Police,—though even here there is a distinction,

since the force is financed from provincial revenues instead of from rates levied locally, as in England; but everywhere else in India, however big a city may be, the police stationed therein, instead of being a purely local force, form part of the police force of the District in which the city is situated, and are liable at any time to be transferred to a rural station many miles away. Since the average personnel of the police station jurisdictions into which the whole of British India is divided does not exceed a dozen or so men, including the Station-house Officer, one or more assistants, and a head constable who acts as deputy to the Station-house Officer and looks after the men,—and since the area of these jurisdictions is very large,—it is impossible for the police to make more than occasional visits to the remoter parts of them, and the effectiveness of the police administration is thus very closely dependent upon the co-operation of the *chaukidar* or village watchman, the village headman, and the general public. One other important point in which the police force of this country differs from that of England has to be borne in mind; all over India, certain sections of the Police have to be provided with and trained in the use of arms, since they are frequently faced with the necessity of conducting operations against armed and desperate men to whom human life is of no account, or of dealing with serious riots and disturbances arising from communal or other causes.

The custom of hoarding wealth, whether in cash or in gold and silver ornaments, which is so prevalent throughout this land, is a frequent inducement to crime; and numerous sections of the population are always potentially criminal, either because of their poverty, or from the desire for adventure or revenge. Moreover, from time immemorial wandering criminal tribes, many of which are still unreformed, have been accustomed to move to and fro over the plains of India, and it is still possible, owing to the country's enormous distances and the small numbers of the police, for gangs of armed robbers, or "dacoits", to continue their depredations for weeks or months on end,—at any rate in the remoter Districts,—before they are captured or killed. Cattle stealing, too, is very prevalent, and the peasant is often prepared to pay ransom for his animals rather than invoke the aid of the police; indeed, in many parts of the country, particularly in the North, there is a considerable class of persons who make a regular living by acting as

middlemen between the cattle-thief and his victim. Thus there has at all times been ample work for the police in India in dealing with crimes arising from the peculiar circumstances and customs of the country, or from the ordinary aberrations of human nature. But in recent years they have found themselves confronted with problems of an altogether different kind; for the spread of modern education and technical knowledge, and the improvement in communications, has brought about an alarming increase in the more sophisticated types of crime such as bogus company promoting, coining, forgery, confidence-tricks, and embezzlement, and enabled the criminals to work over much larger areas. Unquestionably, however, the police have been quick to re-adjust their ideas and practice to the changing conditions, and the Criminal Investigation Departments in the various Provinces are well abreast of the latest crimonological developments. What is known as the *modus operandi* system is now being introduced, and crimes such as burglary are not investigated separately but in the mass,—the movement of gangs and the person associated with them, individual peculiarities, and the characteristic methods employed being carefully noted. During the year under review, however, this development,—as also many others whereby the efficiency of the police was being gradually increased,—had to be in large measure suspended, owing to the extraordinary demands which the various manifestations of the Civil Disobedience Movement made upon their time and energy. How great was the strain imposed on them by the peculiar events of the year, and how admirable were the services they rendered, will be apparent from the paragraphs that follow, in which the work accomplished by the force in each province is analysed in detail.*

In Assam, the number of cognizable cases of crime reported to the Police under Classes I—V, and instituted in the courts, amounted during the year to 19,674, as against 23,860 in 1929-30. This total, however, does not include the cases reported in the Habibganj Magistracy, owing to the fact that the criminal records there were destroyed when the buildings were maliciously burnt down in December; but since, during 1929-30, the number of cases reported at Habibganj did not number more than 2,153, it is prob-

* The facts given relate throughout to the calendar year 1930, not the financial year 1930-31, except where the text clearly indicates the contrary.

able that there was actually a real decrease in cognizable crime throughout the Province as a whole. This seems to have been due in part to the energetic and successful action taken by the police during the year against known criminals,—as for example in Karimganj sub-division,—although it is at least probable also that the preoccupation of the force with matters arising out of the Civil Disobedience Movement resulted in less reporting. The total number of cases of serious crime reported amounted to 7,059, as against 7,782 in the previous year; cases of burglary, theft, dacoity, robbery, coining, and cattle-theft increased. The increase in cases of rioting was substantial, the figure being 334 as against 290 in the previous year. Eighteen cases were attended with loss of life. The communal riot which occurred at Digboi in Lakhimpur District resulted in the deaths of one Hindu and three Muhammadans. A head-hunting scare among the credulous tea-garden coolies was responsible for serious rioting in some tea-gardens in the Darrang District. There was a case of lawlessness among the Cacharis of Hazarigaon in Kamrup District; while some accused men were being escorted to the police station, Cacharis numbering about 200 attacked the police and removed the arrested persons from their custody. In Lakhimpur District the European Manager of a tea-garden was assaulted by coolies and died from the injuries he received. Cases of dacoity rose from 36 to 55; of robbery from 27 to 34, of coining from 11 to 15 and of cattle-theft from 178 to 205. As regards the coining cases, a big gang of coiners, the leader being one Nurul Islam, a goldsmith of Kamarbag, in Mymensingh District, was detected during the year in the Goalpara District, and it is hoped that this discovery will lead to a diminution of such cases in future. On the other hand burglary cases declined from 4,370 to 3,795, theft from 2,696 to 2,443, murder from 61 to 60, and culpable homicide from 113 to 108. The marked decrease in cases of burglary and theft in the Kamrup District was largely due to the success of a police officer in bringing three notorious criminal gangs under the operations of the Criminal Tribes Act. The *modus operandi* system of investigating burglary cases is still in the experimental stage throughout the province and progress during the year was slow. Although the Civil Disobedience Movement in Assam cannot be said to have met with the same success as in most other Provinces, practically every District was affected by it,—Sylhet,

Kamrup, and Nowgong particularly so,—and the year proved to be a very trying one for all ranks of the police, who managed the difficult situations that arose with admirable tact. Demands upon the armed police reserves to supplement the armed branch in supplying guards and escorts greatly increased, particularly during the weeks immediately after the outbreak in Chittagong; and subsequently when the Civil Disobedience Movement was at its height, the armed police reserves in most Districts were frequently called upon to deal with picketing and similar political activities,—an unpleasant task which they carried out in a most praiseworthy manner. Several serious political incidents occurred in Sylhet District, namely the burning down of a Government-aided high school and the Court building at Habibganj, of the high school at Moulvibazar, and the Government high school and the Raja's school at Sylhet; and a serious bomb explosion also took place when one Asrof Khan, a man from the North-West Frontier sustained severe injuries as the result of the accidental bursting of explosives he was secretly preparing in an empty room of the Khilafat Office buildings in Sylhet town. During the year no members of the force were killed, but 9 were injured in the performance of their duties. In addition, one constable from Nowgong was murdered while on leave, and another, from Sibsagar, also on leave, succumbed to injuries sustained in a riot.

In Bengal, the year under review is described as having been the most difficult the police have ever experienced. Practically every District suffered considerably from the effects of the Civil Disobedience Movement, and in Midnapore and also in Mymensingh the situation for a time was very serious. Civil Disobedience committees were formed throughout the Province to recruit volunteers and conduct propaganda in villages, and innumerable meetings were held to preach defiance of the laws. So preoccupied were the police in dealing with the various manifestations of the Movement that many of their ordinary activities had to be abandoned, and in consequence of this, and of the unfavourable economic conditions, there was a marked increase throughout the Province in crimes against property. In addition, the year was distinguished by a large number of violent outrages committed by terrorists and revolutionary parties. The peculiar difficulties with which the police were confronted were discussed in detail by H. E. the Governor of

Bengal during the Police Parade held in Dacca in August 1930, who said: "I fear that it will be long before the police regain their ascendancy over the ordinary criminal, established by long years of hard work and largely destroyed by the action of those who have launched civil disobedience. Dacoities have increased by large numbers and the record of ordinary crime has steadily mounted during these last few months, while the energies of the police have perforce been diverted to meet the want on attack on general peace and stability; when this attack has ceased, your crime work will start with a bad handicap in the general sense of lawlessness it has engendered. It is all the more necessary therefore that the public should give all the assistance they can . . . Throughout the province an attempt has been made to bring Government to a standstill, to loosen the forces of disorder and to break the prestige of law, which is the only protection for the ordinary citizen. It is the police force of Bengal that has stood between its inhabitants and chaos. In Midnapore, in Mymensingh and Chittagong organized attempts have been made to bring about anarchy; in the rest of the province intimidation has been rife and the people have been urged to defy the law and to flout the authorities whose duty it is to enforce it. You have been subjected to harassment and insult, to persecutions and annoyances; many of you have been injured, some of your number have been murdered and all of you have been worked almost to the breaking point. I am proud of the record of the Bengal Police during this time of trial. Your loyalty has stood firm against all temptations; every officer has testified to the unflinching courage, the unbroken discipline and the wonderful self-control, the force, as a whole, has shown."

The total number of cases of serious crime reported in Bengal during 1930 was 46,888, as against 44,390 in 1929. The increase was distributed over all the Ranges except Burdwan, and occurred chiefly under the headings of riot, murder, dacoity, robbery and burglary. Cases of theft, including cattle-theft, decreased. The total number of true cases of riot was more than double that of the previous year, amounting to 1,608, as against 755, and was largely occasioned by the unrest created by the Civil Disobedience Movement, which started with defiance of the Salt Laws, and was subsequently directed largely against payments of *chaukidari* tax; the serious communal disturbances in Dacca and Mymensingh also

helped to swell the year's figures. Among the very numerous cases of riot that occurred, mention may be made of the incident in Howrah on the 10th June, when the police were attacked by a mob while arresting persons accused of theft; of three cases in the Bakarganj District, when the police were violently assaulted while discharging their duties; of the occurrence in Burdwan on the 9th of September, when a political prisoner who had been arrested on a warrant was forcibly rescued by a large number of villagers; and of the communal riot which took place in the Asansol division during the Muharram festival. Largely in order to deal with disturbances of this kind, no less than 1,061 persons, as against 397 in the previous year, were appointed as special police officers during 1930; of these 494 were appointed in Midnapore during the acute phases of the Civil Disobedience Movement, 417 in the 24-Parganas on the occasion of Muharram, 145 in Dacca during the communal riots, and 5 in Noakhali to guard against an apprehended raid from the insurgents of Chittagong. As regards murder, the number of true cases rose from 500 to 601,—Mymensingh showing an increase of no less than 35 cases. Excluding murders by dacoits, and the political outrages at Chittagong, Dacca, and Chandpur, firearms were used in 17 cases, and poison in 6. Among the most conspicuous cases was the brutal murder in Midnapore on the 3rd of June, of two sub-inspectors of police who were battered to death by a band of Civil Disobedience volunteers and villagers, and the murder of a European assistant manager of a tea garden in Jalpaiguri. The number of true cases of dacoity during the year amounted to 1,103, as against 693 in the previous year, but the percentage of cases ending in conviction was only 8·4, as against 15·6; this remarkable decline was chiefly due to the inability of the police to make proper investigations owing to their preoccupation with political disturbances, and to lack of co-operation from the people. An increase in the total number of cases was reported from all Districts except Murshidabad, Jessore, Jalpaiguri, and Noakhali. True cases of robbery increased from 386 to 583, and of burglary from 25,568 to 27,380. The rise under these headings, as also under that of dacoity, is attributable to the spirit of lawlessness created by the Civil Disobedience Movement, and to the fact that the police were so preoccupied in dealing with political disturbances that they could not attend properly to the activities of ordinary crimi-

nals. Throughout the year the rural police in several parts of the Province were much disorganized by the exceptional occurrences of the time, and in Midnapore District many *dafadars* and *chaukidars* resigned their posts and police work was for a while practically suspended. When the "no-tax" campaign was started in this neighbourhood, the *chaukidars* who assisted officers in making collections were frequently assaulted, forcibly deprived of their uniform, and subjected to social boycott. These incidents culminated in a deplorable outrage in December, when two *chaukidars* who had been threatened with various penalties on previous occasions were murdered by an infuriated mob for having arrested certain volunteers.

A separate paragraph must be devoted to discussing the activities of terrorist and revolutionary parties in Bengal and Calcutta during the year, which taxed the resources of the Intelligence Branch to the utmost. Among the numerous outrages which they perpetrated the most spectacular and daring was the raid on the Armouries at Chittagong on the 18th of April, which must be described in some detail. At about 10 P.M. on that day, four batches of terrorists set out from the Congress Office and Ganesh Ghosh's shop, one to capture the Police Armoury, one to capture the Auxiliary Force Armoury, one to massacre Europeans in the Club, and the fourth to destroy the Telephone Exchange and Telegraph Office. The Club party, however, on finding the place practically deserted, soon split up and joined the two Armoury parties. The Police Armoury party consisted of about 50 youths. All were dressed in khaki and the leaders wore officer's uniforms. On reaching the Armoury, the leaders rushed the sentry and shot him down. The remainder followed, broke open the Armoury and Magazine, and armed themselves with muskets and revolvers with which they drove out the unarmed constables from the police lines. The Auxiliary Force Armoury party consisted of about seven persons. The leader, dressed as an officer, walked up to the sentry and after replying to his challenge, shot him and another sepoy fatally. Sergeant-Major Farrell, on coming out of his quarters nearby, was shot dead. The Armoury was then forced open and pistols, revolvers, rifles and a Lewis gun were taken away. The ammunition, which was in the magazine, was fortunately overlooked. The building was then set on fire with petrol, and the

raiders, after loading their cars with arms, drove to the police lines to join the other party. While in possession of the Armoury they fired on all motor cars passing on the road, killing a railway guard, the driver and assistant driver of a taxi, and a constable who was in the District Magistrate's car. This party therefore murdered seven persons altogether, and in addition wounded two others. The Telegraph Office party consisted of about six persons. They seized the telephone operator and chloroformed him, hacked the telephone board to pieces, and set it on fire. The telegraph master was shot at when he came to the operator's assistance, but he returned with a gun and drove them off without their having succeeded in destroying the Telegraph Office. They then went to the police lines and joined the main party. The number of raiders at the police lines now amounted to about 60. Having armed themselves with muskets they were being instructed in using them. At about midnight, however, Mr. Farmer, Deputy Inspector-General of Police, Mr. Johnson, Superintendent of Police, Mr. Lewis, Assistant Superintendent of Police, and Mr. Barraclough, a member of the Auxiliary Force, opened fire on them with a Lewis gun, secured from a subsidiary armoury. The raiders returned the fire and also threw a bomb which failed to explode. Himongshu Sen, one of the raiders, while setting the guard-room on fire with petrol, got so severely burnt that he subsequently died. Two of the leaders and two others took Himongshu Sen away in a motor car, abandoning the rest of the party, who thereupon retreated to the hills North of the town, each carrying a musket, at least one revolver or pistol and a haversack full of cartridges. Nineteen of the raiders were shot dead during the skirmishes which subsequently took place when the police attempted to round them up. During one of these skirmishes Constable Prasanna Barua displaying magnificent courage and tenacity in seizing and clinging to one of the raiders although mortally wounded. Meanwhile another batch of terrorists had destroyed railway and telegraphic wires at Dhoom, 40 miles from Chittagong, and another had cut the telegraph wires and made an unsuccessful attempt to derail a train near Laksam, 70 miles away. On the 23rd of April, four young men were arrested at Feni railway station on suspicion that they had been concerned in the Chittagong Armoury raid, but when they were about to be searched they opened fire on the police with revolvers, wounded a

sub-inspector and two constables, and made good their escape. The numerous other outrages that occurred during the year must be described more briefly. Many of them are probably attributable, directly or indirectly, to the success of the Chittagong Armoury Raids, which gave a great impetus to terrorist activities throughout the Province, and fired the imagination of revolutionary-minded youths. On the 2nd of August, when a constable was about to arrest an absconder at Jamalpur, Mymensingh, the latter opened fire at him with a revolver and escaped. The constable was not wounded. On the 25th, two bombs were thrown at the car in which Sir Charles Tegart, Commissioner of Police, Calcutta, was proceeding to his office along Dalhousie Square East. One of the culprits died on the spot and the other was caught. Both had in their pockets live bombs and revolvers. On the night of the 26th, a bomb was thrown on the Jorabagan Court Buildings in Calcutta; five persons were injured, the culprits disappearing in a taxi. On the 27th, a bomb was thrown on the roof of the Eden Garden outpost in Calcutta, injuring four persons including a constable, of whom one died subsequently. On the 29th, when Mr. Lowman, Inspector-General of Police, and Mr. Hodson, Superintendent of Police, Dacca, were on a visit to the Mitford Hospital, Dacca, they were shot by one Binoy Krishna Bose. Both were seriously wounded and Mr. Lowman subsequently succumbed to his injuries. On the 30th, a bomb was thrown into the house of Inspector Pabitra Nath Bose of the Mymensingh police whose two brothers were injured; a similar outrage was attempted in the house of an excise sub-inspector, but the bomb failed to explode. On the 8th of September, a band of 15 or 20 young men, some of whom were armed with revolvers, carried out a successful dacoity in the Ichapura post-office in Dacca. On the 23rd, a bomb was thrown at the District Intelligence Branch Inspector who was sitting in the Kotwali police-station, Khulna, and injured a head constable and a sub-inspector. On the 13th of October, an assistant sub-inspector and a constable were shot at by absconders at Jamalpur, Mymensingh District. On the 17th, four Bengali youths entered the premises of a Marwari firm in Armenian Street, Calcutta, and at the point of revolvers and daggers took away money and papers. The *darban* wounded one of them but was himself shot dead. The wounded robber also injured two constables who arrested him, with

a knife. On the 1st of December, at Chandpur railway station in Tippera, two young Bengalis fired at and mortally wounded Inspector Tarini Charan Mukherji of the Railway Police, who had arrived there from Chittagong. On the 8th December 1930, three terrorists dressed in European costume rushed into the office of Colonel Simpson, Inspector-General of Prisons, at Writers' Buildings, Calcutta, and fired several shots killing him on the spot. Mr. Nelson, Judicial Secretary, who came out was also shot in the thigh. The assailants then entered a room where one of them swallowed poison and died; the other two shot themselves, but while one named Binoy Bose (who had murdered Mr. Lowman in August), died in hospital, the other, Dinesh Gupta, recovered and was placed on trial, and was subsequently convicted and executed. The total number of terrorist outrages, such as actual or attempted murders, dacoities, or robberies, which were perpetuated in Bengal, including Calcutta, during the year was 36. Seventeen terrorists were killed by the police in skirmishes, and in addition 2, as we have seen, committed suicide after murdering Colonel Simpson. The number of people killed by terrorists was 19, and the value of the property secured by them as a result of dacoities or robberies was Rs. 51,179. At the end of the year 401 terrorists were under orders of internment under the Bengal Criminal Law Amendment Act. The number of persons convicted for terrorist crimes during the year was 41.

During the year the total number of members of the Bengal Police Force who were injured while performing their duties was 350, and 11,—including the Inspector-General, Mr. Lowman,—were killed. The number of members of the Calcutta force who were injured was 121. As regards the latter force, the year proved an extremely trying one also, as will have been inferred from the previous paragraph. Apart from their endeavours to combat the activities of the terrorists, they had also to undertake innumerable difficult and unusual duties, necessitated by the Civil Disobedience Movement, which,—although it did not assume such serious dimensions as in the city of Bombay,—led to rioting in the streets, numerous *hartals* and unlawful processions, and severe picketing, which often resulted in violence. The Indian ranks were also subjected to insidious attempts to subvert their loyalty. Nevertheless, the whole force may be said to have met the challenge with alacrity and cheerfulness; the long hours of duty were endured without com-

plaint and the discipline and loyalty of all ranks was never for a moment in question. The total number of convictions secured for the most important types of crime during the year was 2,320, as against 2,298 during the previous year. Convictions for theft, burglary, receiving stolen property, and dacoity were less, while those for rioting, robbery, and coining increased; convictions for murder remained the same. The figure for rioting rose to 349, as against 84 in 1929 and 41 in 1928. The most serious riots which occurred during the year were those on the 1st and 15th of April, and on the 6th of May. An unpleasant incident during the second April riot was the attack made on the fire-brigade which had been summoned when three tramcars were set alight by the mob; no less than 17 members of the brigade were injured, two very seriously. Apart from the cases connected with the Terrorist and Civil Disobedience Movements which were investigated by the police, mention may be made of the following. At the end of November 1929 three Madrasis were arrested in the act of stealing a bag containing Rs. 26,500 from the Peninsular and Oriental Bank, Calcutta. Early in January 1930 two similar cases were reported, one by the Hong Kong and Shanghai Bank, Calcutta, and the other by the Imperial Bank of India, Calcutta. It then became clear that other members of the gang were operating in Calcutta. During the investigation of the first case it transpired that the culprits were members of a gang of criminals known as the "Kepmari Gang" of South Arcot and Trichinopoly in the Madras Presidency. A requisition was therefore made to the Criminal Investigation Department, Madras, for the services of an officer to assist the Detective Department, Calcutta, with the result that 9 other members of the gang were traced and sent to Madras where they were dealt with under the Criminal Tribes Act. Since the arrest of this gang no further thefts of the kind have been reported. A gang of 7 persons who opened bogus business centres in different parts of Calcutta and then systematically cheated a number of firms by securing goods in advance after which they closed their business and disappeared, was successfully prosecuted during the year. One Jamini Kanta Ghosh, the Managing Director of a bogus concern, called "The Swaraj Bank Limited", sold his shares to the public on the condition that he would employ men on the same pay a month as the amount of shares purchased. A number of unsuspect-

ing persons purchased shares in the hope of getting employment, which they secured, but not their wages. In this way the accused collected a sum of Rs. 13,000. He was duly sent up for trial, convicted and sentenced to 9 months' rigorous imprisonment.

In Bihar and Orissa the Civil Disobedience Movement had a marked effect in the volume of crime. The campaign began, as elsewhere, with defiance of the Salt Laws, and was followed by attacks on excise revenue, the *chaukidari*-tax and the trade in foreign cloth. The loyalty of Government servants and particularly of the police was frequently assailed, and during the later phases of the Movement there were several outbreaks of mob violence. The Tirhut Division and the Districts of Bhagalpur, Monghyr, and Manbhum were the most troubled areas. Altogether over 11,300 persons were convicted of offences in connection with the Movement, either under the ordinary law or under the special Ordinances enacted during the year. During the ten years ending in December 1929 there had been a steady decline throughout the province in the two forms of crime, burglary and theft, which react most readily to preventive action, burglary having fallen from 19,500 cases in 1920 to 13,600 in 1929, and theft from 18,000 to 12,600. Dacoity also had decreased from 274 cases to 219, while rioting had reached its lowest point since 1922. The total amount of cognizable crime had declined steadily throughout the period, the figure in 1920 having been 56,800 and in 1929, 45,600, which was the lowest total attained in the history of the Province. The political upheaval, however, quickly altered the situation and caused a severe setback. As the Civil Disobedience Movement gained impetus, the figures for crime increased, and reached their peak in the third quarter of the year, during which the figures for dacoity, the crime which reflects most clearly a state of disorder, were remarkably high. The weakening of the Movement was accompanied by a sharp fall in the amount of dacoity, despite the fact that at this time the economic depression was becoming increasingly severe,—and the conclusion is therefore irresistible that the unprecedented increase in this crime was due to the Civil Disobedience Movement alone. Other forms of crime showed an approximately similar rise and fall, robbery and burglary being 30 per cent. and rioting 58 per cent. above the average during the third quarter of the year. In the last quarter the excess fell to *nil* for robbery, 25 per cent.

for burglary and 18 per cent. for rioting. For the whole province there was an increase over 1929 of 14 per cent. in murder, 12 in burglary, 58 in dacoity and 82 in rioting, and the number of true cognizable cases rose from 45,638 to 50,208. Moreover it must be borne in mind that for most of the year, throughout wide tracts of the Province, conditions were such as to render the proper reporting of crime extremely difficult; the victims were discouraged from declaring their losses, village *chaukidars* ceased to function, and the police were fully occupied with other matters. Exaggeration, therefore, cannot be claimed as an explanation of the figures; on the contrary, it is quite certain that the number of cases reported, in particular those of burglary, were far less than what actually occurred. The figures of true cases of the more important type of crime in the Province during 1930 were as follows. Cases of riot and unlawful assembly amounted to 1,121, as against 616 in the previous year; of murder, to 319, as against 279; of culpable homicide, to 170, as against 153; of dacoity, to 346, as against 219; of robbery, to 139, as against 137; and of swindling to 655, as against 606. All these types of crime therefore showed increases. On the other hand true cases of ordinary theft fell from 11,946 to 10,998; and of cattle-theft from 688 to 643. Among the 319 cases of murder, it was reported that 16 were caused by witchcraft; in Sambalpur there was a case of human sacrifice during the Durga Pujas, in which a boy aged 7 was killed; and a widow in the Hazaribagh district attempted to commit *sati*. While dealing with the various riots and unlawful assemblies, the police were attacked on many occasions. For example, in Monghyr, the police were set upon by a mob of coolies from the Jamalpur Workshops and compelled to open fire. At a village near Beguserai in the same District a large hostile crowd attacked the Sub-divisional Officer and a party of armed police under an Assistant Superintendent of Police. In Muzaffarpur, an unlicensed procession which was taken out in defiance of a prohibitory order refused to disperse and attacked the police with stones, who were obliged to fire in self-defence. At Sabour in the Bhagalpur District a mob led by Congress volunteers made a premeditated attack on a party of police. In Saran hostile mobs twice attacked a party of mounted police who were assisting in collecting *chukidari* tax; on each occasion the police were forced to fire. At Bhorey in the same District the police, while making

arrests in connection with the " no-tax " campaign, were attacked by a large mob, and a shot was fired at a sub-inspector; the police returned the fire and the mob dispersed. In the Dinapur Sub-division of Patna, an attempt was made to break up an Aman Sabha meeting; a few arrests were made, and the Sub-divisional Officer removed persons in his car; the mob however stoned the vehicle and the officer was injured. At Godda, in the Santal Parganas, a party of police, while dispersing a meeting organized by Hindu agitators in defiance of a prohibitory order, was attacked with brick-bats; the sergeant-major sustained severe injuries and several constables and *chaukidars* were hurt. In Balasore a party of police sent out to make arrests in connection with the " no-tax " campaign was attacked and several constables were severely injured. In the same District a police encampment was raided by a mob of persons who were breaking the Salt Law; the police were overwhelmed and some of the constables were stripped of their uniforms. In Manbhum, a sub-inspector, while attempting to arrest picketers, was attacked by villagers and his revolver was seized; later, a riot occurred, in which the police were attacked by a mob of villagers armed with bows and arrows; the police had to fire, and one person was killed. Despite all the talk about " excesses " committed by the police during the year, only 18 policemen were convicted under the Indian Penal Code, which is less than half the average number for the preceding quinquennium; only 13·4 per cent. of criminal charges against the police ended in conviction, against a previous average of 15·5 per cent. Of the 36 officers and 112 men of Champaran, Muzaffarpur, Monghyr, Bhagalpur, Purnea, Santal Parganas, Balasore, Hazaribagh, Manbhum, and Singhbhum who were assaulted by Congress workers, 2 sergeant-majors sustained severe injuries and a sub-inspector lost an eye. A sub-inspector of Dinapore police-station was severely assaulted when investigating a case. In Monghyr a head-constable was injured while arresting accused persons. A constable of Bhagalpur and a sub-inspector and 2 constables of Hazaribagh were severely assaulted while making house searches in excise cases. A constable of Bhagalpur, in trying to arrest an escaped prisoner who jumped from a running train, received injuries which ended fatally. A constable of Ranchi was assaulted by a mob when arresting a man suspected of being in possession of illicit liquor. In Manbhum, a sub-inspector and a

constable received injuries while executing non-bailable warrants; and in Singhbhum a head-constable received injuries in a gambling raid. The village police remained for the most part staunch and loyal throughout the Civil Disobedience Movement, although the pressure of political events interfered seriously with their usefulness in checking ordinary crime. Of the numerous instances of good work reported the following deserve mention. In Patna District a picketing party, arranged entirely by a local *daffadar* on his own initiative, arrested a criminal with a *sondhmari*. In Shahabad a notorious gang, failing to dissuade a *daffadar* from giving information against them, murdered him. In Champaran, a *daffadar* and a *chaukidar* faced a mob of 500 men obstructing a liquor vendor and later gave evidence in spite of threats of social boycott. In Sambalpur a gang of dacoits injured a *chaukidar* who challenged them. In Monghyr a *chaukidar* rescued an injured head-constable who had been assaulted by villagers. In Bhagalpur a *daffadar* and 8 *chaukidars* arrested two burglers; and in Purnea *chaukidars* arrested 4 Jhijha Dusadhs with stolen property. There was a certain amount of communal tension during the year, particularly in Saran. Altogether there were 16 cases of communal rioting and unlawful assembly. During the Bakr-Id festival a clash occurred in the Bhabua sub-division of Shahabad. Some 300 Hindus collected in the mistaken belief that a sacrifice of cattle had taken place. The local officers had succeeded in pacifying them when a mob of about 200 Muhammadans armed with lathis, spears and swords, attacked the Hindus, one of whom subsequently died. The prompt action of the police and the conciliation committee prevented a spread of the trouble. The Muharram festival was marked by two small riots in Monghyr, the Hindus being the aggressors on one occasion and the Muhammadans on the other, and affrays also occurred between Muhammadans in Darbhanga and Muzaffarpur Districts, one man dying of injuries in the latter place.

In the Bombay Presidency, exclusive of Bombay City, the number of cases of cognizable crime reported to the police amounted in 1930 to 30,941, as against 28,887 in 1929. There were 884 more offences under the Indian Penal Code and 1,170 more under the Special and Local Laws and Minor Acts. Both these increases may be mainly attributed to the effects of the Civil Disobedience Move-

ment, which rendered conditions throughout the year very abnormal. The increase in most Districts of serious crime against person and property, such as dacoities, robberies, and house-breakings, was particularly striking, and clearly indicates the unsettled state of affairs that persisted throughout the Presidency owing to political agitation, and the extent to which natural and habitual law-breakers, of the non-political variety, were enabled to wage successful war on society owing to the diversion of the energies and attention of the police from their normal duties. One of the problems of police work in India at all times of the existence of numerous bazaar bullies and ruffians usually known as " goondas " or " mavalis ", who prey upon the public whenever, for any reason, the attention of the guardians of law and order is distracted. Naturally, 1930 proved a satisfactory year for this fraternity, and their numbers were swollen by the addition of numerous novices to the art of goondaism who profited by the Congress creed that law-breaking is an act of virtue. The actual number of cognizable cases of crime reported as being directly connected with the Civil Disobedience Movement was 3,275. If these are excluded from the total of 30,941 already mentioned, the year's criminal statistics were better by 1,221 than those for 1929. But to draw the normal conclusion from these figures would be erroneous, since there is no doubt that a large number of cognizable crimes were not reported to the police, either because would-be complainants feared reprisals, or because they were committed either voluntarily or as a result of pressure to a policy of non-co-operation. A typical example of the paralysis caused by the Civil Disobedience Movement was reported from Bardoli in the Surat District where a murder was committed and the aggrieved parties not only refused to complain but professed ignorance of the fact that the crime had taken place. Communal tension continued to prevail in certain Districts during the year, but the imposition of additional police and tactful handling of difficult situations prevented any serious breach of the peace. As regards the executive police, since their ordinary work was in large measure suspended, no extension of the *modus operandi* system was possible. The Criminal Intelligence Branch was however less hampered by the events of the year and continued to prepare the crime records of inter-district and inter-provincial criminals, and records of 61 such individuals were prepared and published in the Police Gazette and records of 493 others were taken in hand; but as

the District Police were fully engaged, in circumstances of unprecedented strain and anxiety, in dealing with activities arising out of the Civil Disobedience Movement, no attempt could be made to popularise and extend the utility of the Crime Record System. A number of acts of exceptional gallantry were performed by the police during the year, and also some unusually meritorious detective work. For example, in July, when at the instance of the Junnar Municipality a villager was being tried for assaulting an octroi clerk, a rowdy mob of 1,000 villagers invaded Junnar town and marched on the administrative offices with the object of dragging the *mamlatdar* from his court and of forcing him to discharge the accused. Jamadar Jan Gul, the senior police officer, with only five constables, held up the mob at the main gate of the court and later, in spite of showers of stones, succeeded in driving them back without resort to firing. His gallantry and restraint saved the *kacheri* and averted what might have proved a most unpleasant incident. Again, on the night of the 6th of September, the house of one Anandram Budhaji Marwadi of Nandur Madhameshwar, Taluka Niphad, Nasik District, was broken into by a large gang of dacoits, who beat the inmates severely and stole property valued at Rs. 14,000 consisting of cash and jewelry. Information was promptly given to the police at Niphad police station, and the sub-inspector in charge proceeded to the scene. An examination of the neighbourhood led him to think that some of the dacoits had used a tonga in approaching the house concerned. Steps were immediately taken to trace the tonga and it was eventually ascertained that it had been brought from the village of Suregaon in Ahmednagar District. Further enquiries were continued in that area and eleven members of a gang comprising Marathas, Sonars and Bhils, and including men of means, were arrested. Property valued at Rs. 6,000 was recovered. The case, at the time of writing, was still *sub-judice*. Another impressive incident occurred on the 28th of September. For many months previously, parties of special police had been on duty in the hilly country round Trimbak, in the Nasik District, in order to track down a notorious dacoit by the name of Nâna Farari. These parties were under the direct control of a sub-inspector. On the date mentioned, the sub-inspector deputed a head constable and one other constable, both in disguise, to try to obtain information regarding Nana who was suspected to be in the vicinity of Torangan. The head constable went as directed

towards Torangan, and chancing to hear shots in a jungle, soon discovered that he and his companions had come upon Nana Farari and his confederates. One Kalya, an intimate of Nana's, was standing on guard with a gun whilst the rest were sitting down. The head constable immediately decided to attack the gang and opened fire with the revolvers with which he and his single subordinate were armed. There is little doubt that two shots took effect as bullet marks were found on Nana's body when he was shot dead at a later date. On this occasion, however, the gang made good their escape in the dusk. The quality of the head constable's pluck and determination is emphasized by his lack of familiarity with a revolver. His action was undoubtedly responsible for putting Nana out of action for some months. In the final encounter with Nana in April 1931, the same officer again showed a complete disregard of danger. During the year, no less than 5 policemen were killed and 57 injured, mostly while on duties connected with the Civil Disobedience Movement. Many others received slight injuries from stones thrown by mobs on various occasions.

In Bombay City, the activities of the Congress were very intense, and Civil Disobedience assumed a particularly severe form.* From April until the end of the year hardly a day passed without there being some procession, demonstration, meeting, or outbreak of disorder, and the strain imposed on the police was very great. Not only had they to work for exceptionally long hours at tasks which were arduous, distasteful, and frequently dangerous, but they were exposed to every kind of abuse and vilification in public and in the press, and were at times assaulted in the streets. So extraordinary were the conditions that it would have been scarcely surprising had the force broken under them. Actually, however, its conduct was admirable throughout; the number of men who reported sick was no greater than in the previous year, and there were hardly any resignations. But in such circumstances it was inevitable that the ordinary work of the police should suffer. The total number of cognizable cases of all kinds reported to the police was 76,822, as against 86,165 in 1929 and 93,638 in 1928. Cases of serious crime, however,—that is to say cases under classes I—V of the Indian Penal Code,—amounted, by a curious coincidence, to exactly the same total as in the previous year,—namely 8,031. Substantial decreases were recorded under the headings murder, rioting, and causing grievous hurt,—which may seem a somewhat surprising

* See also Appendix IV.

result until it is recollected that the year 1929 showed quite exceptional totals for these crimes owing to the serious communal riots, and the frequent labour disputes, that occurred. The actual total for murder was 47, as against 139, for rioting 65 as against 249, and for grievous hurt 257 as against 294. Increases were recorded under practically every other head, the most significant, perhaps being the rise from 37 to 55 in cases of assaulting a public servant to deter him from his duty. Cases of robbery increased from 83 to 125, of culpable homicide from 8 to 21, of criminal breach of trust from 509 to 566, and of theft from 3,967 to 3,995. Several of the murder cases were distinctly interesting from the criminological point of view, but the limitations of space preclude us from discussing them here. Among the more serious of the riots which took place was that in the Bhindi Bazaar on the 26/27th of May. The immediate cause was trivial. A dog was being beaten by a Muhammadan, and when a police sergeant interfered, a disturbance arose, which resulted in a general attack by the Muhammadans of this locality on the police quarters. The riot rapidly assumed serious proportions and thousands of Muhammadans surrounded a police force of perhaps a hundred officers and men who were living in or were posted near the Sandhurst Road East Police Lines. Intermittent firing by the police did not have any definite effect. Troops were called out at 1-30 in the morning and under their protection the police took more drastic action, but though the situation became calmer, trouble was again experienced next day and further firing had to be resorted to. The disorder came to an end almost as suddenly as it had commenced and no further trouble was experienced after mid-day on the 27th of May. Throughout the year, despite the exceptional conditions that prevailed, the unarmed Bombay City police carried on without any augmentation of their strength. The armed branch however was increased by 200 men, and on several occasions the military had to be called out to render assistance.

In Burma,—exclusive of Rangoon City,—the total number of important crimes reported during the year ending on the 31st of March 1931 was 2,552 as against 1,871 during the preceding twelve months. The most remarkable increase occurred under the heading of dacoity and dacoity with murder, which accounted for 909 cases as against 416 in the previous year, and there were increases of more or less gravity in every other type of crime except those under

arson and offences under Section 126 of the Railway Act, which declined from 29 and 8 respectively to 24 and 7. The figure for murders, which was exceptionally high even in the previous year, rose still further, and totalled 1,271 as against 1,135. For this deplorable state of affairs the rebellion which broke out in the Tharrawaddy District on the 23rd of December, and which continued sporadically in various parts of the Province until after the end of the period under review, was of course largely responsible.* A large number of acts of gallantry on the part of the police were reported during the year, mostly of course in connection with the suppression of the rebellion. Among them were the following. On the 30th of August while out on surveillance duty in the Thaton District, a sub-inspector of police and a constable received information that a gang of dacoits armed with guns would assemble in the vicinity of Natkyigyaung village for the purpose of attacking it. The police officers proceeded to the spot with a few villagers and in the fight that ensued two dacoits were shot down and captured along with two guns and a quantity of ammunition. On the night of the 1st of October, the Inspector of police, Pakokku, received information that a gang of dacoits armed with guns would attack Tangyi-Kywe village, and proceeded there with a party of police and laid in wait. On entering the village the dacoits fired on the police party. The police returned the fire, killing two dacoits and capturing some arms and ammunition; they themselves suffered no casualties. On the 25th of December, a military police party of 50 men was attacked by a force of about 800 to 1,200 rebels in Tharrawaddy District. The rebels suffered heavy casualties. U Maung Gale, Deputy Superintendent of Police, was killed in action. On the 30th, a party of military police and troops in a camp was attacked by about 500 rebels. The attack was repulsed and the rebels fled into the jungle after suffering heavy losses. On the same day the 3/20th Burma Rifles captured and burnt the rebel headquarters and the palace of the rebel "king" at Alantaung; the "king" himself narrowly escaped capture. On the 2nd of January, a party of civil police stationed at Kinpadi was attacked by about 50 to 60 rebels. After an hour's fighting, the rebels were beaten off after 6 of their men had been killed. On the 4th, the rebellion showed signs of spreading to the Yamethin District, but

* The origin and course of this outbreak have been discussed in Chapter II.

was speedily quelled by the prompt action of the military and civil police; the local rebel leader, U Thattalawka,—a monk,—and 39 of his followers were captured. On the 7th, there was an uprising at Dedaye in Pyapon District, and about 600 rebels attacked Tamatakaw and Toe villages. A party of military and civil police got in touch with the attacking force which numbered 600 and inflicted very heavy casualties, as a result of which the rebellion there was brought to an end. On the night of the 14th, a gang of eight dacoits armed with a gun attacked Tagwa village, Henzada District. The surveillance sub-inspector of police with three constables happened to be in the village at the time, and they attacked the dacoits killing the leader who had the gun and wounding another. During the period under review a total of nine police officers and men were killed or died from the effects of injuries sustained while performing their duties, and 2 were injured.

The year 1930 proved an exceptionally difficult one for the Rangoon police. On the 19th of March disturbances of some gravity arose over the trial of the Bengali Congress leader Mr. J. M. Sen Gupta, who had come over to Burma and delivered some speeches which were considered to be seditious. While the proceedings were in progress the people who had assembled outside the court became disorderly and started throwing stones at the police. During the affray which ensued 30 policemen and 34 members of the crowd were injured, but fortunately there were no deaths. On the 5th of May the severe earthquake which practically destroyed Pegu caused a great deal of damage in Rangoon. Numerous houses collapsed, fires broke out, and the casualties were substantial, about 44 people being killed and 36 injured. The city for a while was in a state of panic, and confusion and unrest prevailed for some time afterwards. On the 24th of June a serious outbreak of disorder occurred in the Central Jail and resulted in over 30 deaths. Some of the prisoners in the jail had managed to obtain firearms, and it was with great difficulty that the military police, who had to be called in to deal with the situation, were able to restore order. On the 23rd of December the news of the rebellion in the Tharrawaddy District stirred up a good deal of unrest in the town and this no doubt was in part responsible for the gravity of the rioting which broke out between Burmans and Chinese on the 2nd of January 1931. The actual incident which started the disturbances,—which continued sporadically for four days,—was the molestation of a

Chinese girl by a well-known Burman criminal. No less than 14 people were killed and 81 injured during the course of these disturbances, and on two occasions they were compelled to open fire. But more serious than any of these events were the exceptionally savage riots which broke out on the 26th of May 1930 between Burman and Indian labourers at the Lewis Street Wharf, and soon involved practically the whole town in unprecedented scenes of bloodshed and confusion. The cause of these disturbances,—though not their severity,—is fairly easy to explain. On the 8th of May the Coringhi shipping coolies struck work for increase of pay,—having been incited to do so by a prominent local supporter of the Congress party. The shipping authorities thereupon called in unskilled Burmese labourers. When the Indian coolies saw that the Burmans were adapting themselves to the work, they started endeavouring to intimidate them, but finding this of no avail, and being themselves on the verge of starvation, they decided, on the 26th of May, to return to work. The Burman coolies were thereupon dismissed, and when a small body of them were protesting against this, they were set upon by a large number of Coringhis. In an extraordinary short space of time the fighting spread throughout the city, and within a few hours there were few parts of it which were not involved. Rioting of the most savage and sanguinary nature continued for about 48 hours, and it was not until several days had elapsed, and a conciliatory committee composed of the leaders of both communities had been appointed, that conditions in the city were restored to normal. Perhaps the most serious incident occurred in the afternoon of the first day, when a crowd of Coringhis was overpowered by a smaller number of Burmans near the Steavenson Street jetty and forced into the river,—many of them being drowned. The state of affairs throughout the city having been what it was, no accurate statement of the casualties is possible. It is however a fact that the Indian casualties that occurred were far more numerous than the Burman. The number of dead bodies, Indian and Burman together, which were brought into the General Hospital was 48, and in addition 52 of the inmates died. The total number of patients treated in the General and Ramakrishna Hospitals, allowing for transfers from the latter to the former, and excluding those who died, was 937. The whole course of the disturbances was subsequently investigated by a Committee of Enquiry consisting of three non-officials presided over by a judge

of the High Court, and their report was signed on the 26th of July. In view of the turn which events had taken, it was inevitable that the conduct of the police should have been called in question,—some observers alleging that they had been too lenient to the rioters, others that they had been too severe, and others again that they had favoured one or other of the opposing factions. It could not be denied that the force at the disposal of the authorities was not organised to deal at once with so widespread an outbreak, but the Committee reported that all ranks showed gallantry and untiring devotion to duty, and did their best to cope with the disturbances in an impartial spirit; they also came to the conclusion that the strength of the force was inadequate and recommended that it should be increased. As regards the ordinary routine work of the police the year could be considered fairly satisfactory. Decreases were recorded in the reported number of cases of most classes of crime,—and particularly in housebreaking and theft, whose suppression depends in large measure on the efficiency of patrol-work on the part of the police. The total number of criminal cases in classes I—V dealt with during the year was 1,773 as against 2,105 in 1929. There were, however, increases in the number of murders and dacoities, which rose from 12 and 1 to 20 and 4 respectively; robberies amounted to 8,—the same total as in the previous year. These figures however do not include the crimes of violence perpetrated during the riots in May, which of course were altogether exceptional. The general conduct of the police during the year was reported as having been excellent.

In the Central Provinces and Berar, the total amount of crime reported during the year was about 4½ per cent. less than in 1929, and the decrease would probably have been much greater but for the number of cases which were either directly due to activities connected with the Civil Disobedience Movement. or to the general spirit of lawlessness which that Movement created. Thus the number of riots, which had amounted to 310 in the previous year, rose to 689 and of these no less than 249 were the direct consequence of Civil Disobedience. Similarly, the number of assaults on public servants rose from 223 to 312, and the great majority of these were attributable to the same cause. The Movement was strenuously maintained in the Province by Congress leaders for seven months, and imposed a severe strain on all branches of the police force; but despite the arduous and unpleasant duties which the members of the

force were called upon to perform, and the fact that they were constantly exposed to boycott, harassment, public abuse, and attempt to subvert their loyalty only two constables resigned as a result of the Movement, and one of them would in any case have been dismissed for misconduct. A form of agitation which was resorted to more extensively in this Province than in any other, and which caused the police considerable difficulty and frequently led to violence, was what was known as forest *satyagraha.* Intended originally as a ceremonial removal of quantities of grass, these activities soon degenerated into wholesale looting by crowds of villagers of valuable timber. This aspect of the Movement appealed particularly to the aboriginal jungle tribes such as the Gonds, who form a considerable proportion of the population of the Province; and their low order of intelligence, and the fact that the operation of the Forest Laws has a direct influence on their way of life, enabled the agitators to achieve a substantial measure of success in fostering unrest among them. Most of the disturbances during the year which necessitated firing by the police arose owing to the practice of forest *satyagraha.* In one instance a constable was killed while attempting to arrest one of the leaders of the Gond tribesmen, and next day they attacked a party of armed police who were sent under a District Superintendent to deal with them, and an inspector was seriously injured before they could be dispersed by gunfire. On another occasion firing had to be resorted to when some police who had arrested some agitators were followed by a crowd of Gonds and attacked at a railway station. On a third occasion a small party of police who were endeavouring to deal with breaches of the Forest Laws were attacked by a mob acting behind a screen of women, and after several policemen had been injured were compelled to open fire, as a result of which two women were killed. In all, firing had to be resorted to by the police on six occasions during the year. The total casualties on the side of the police amounted to 1 man killed and 121 injured. As in most other Provinces, action on the part of the police against ordinary criminals was less effective than in previous years owing to the extent to which their time and attention was distracted by political disturbances. The decrease in the total amount of reported crime occurred mostly under the heading burglary and theft, the figure for the former having been 8,518 as against 9,302, and for the latter 18,260 as against 19,753. Dacoities, however, rose from 43 to 68, and no less than 322 murders

were reported, which is the largest total reached since 1918; but it should be noted that only 115 convictions for murder were obtained. There was little communal trouble during the year, and agrarian disturbances, also, were comparatively few, despite the hardships to which the cultivating classes were subjected by the exceptional fall in the prices of agricultural produce; the most noteworthy trouble of the latter nature occurred in Berar, where general looting of money lenders was indulged in in the Buldana District; the trouble however lasted only a few days. Several acts of gallantry on the part of the police were reported; three officers and two constables were awarded the police medal, and five other members of the force were granted titles.

In Delhi, the total number of true cognizable offences in Classes I—VI which were dealt with by the police during 1930 was 3,194, as against 4,603 during 1929. Eleven cases of rioting occurred as against 8 during 1929. Five cases were discharged, 5 remained untraced, and 1 ended in conviction. Particulars of the latter case are as follows. Under the Chief Commissioner's order a terminal tax was imposed on loaded carts coming into Shahdara by the Grand Trunk Road from the 1st of April 1930. On the 11th, some Congress people tried to pass this post with a loaded cart without paying the tax which was demanded from them by a municipal peon. They shouted the usual cries of "*inqalab zindabad*" and said that they were going to break all the Government laws. The Municipal staff tried to detain the cart and a struggle occurred in which the municipal staff received injuries; the cart was forcibly removed without tax having been paid. On inquiries 8 persons were arrested of whom 6 were subsequently convicted. The number of murder cases reported during the year was 22, as against 14 in 1929. Dacoity cases numbered 27, against 9 in 1929. The following case requires special mention. On the 12th of September, in Bhowana village, some dacoits entered the bazaar, fired a shot, and told the villagers to vacate the place,—which most of them did. The dacoits then blockaded the entrances to the bazaar and robbed of their possessions three villagers who had remained. After the dacoits had decamped the returning villagers found Chhote, son of Nanak, a *bania*, lying dead. Investigations of this case and of previous dacoity cases of a similar type showed that they were the work of a large gang headed by the notorious Banwari Lal who had been operating on the Rohtak-Delhi border for some time. Owing

to the preoccupation of the Delhi Police with the Civil Disobedience Movement during the hot weather, it had not been possible for them to pay much attention to these dacoities in the rural areas, but in December Banwari Lal and many of his accomplices were arrested by the combined efforts of the Rohtak and Delhi police forces, during which Sub-Inspector Niaz Ahmed showed conspicuous gallantry and resource. Gangs of dacoits who had been operating in the Gurgaon District and in the New Delhi and Mehrauli Police Station jurisdictions were also dealt with successfully towards the end of the year by the Gurgaon and Delhi Police. As regards other crimes committed during the year, the number of robbery cases was 34, as against 24 in 1929; of poisoning cases 9, as against 6; of coining cases 6 as against 2; of burglary cases,—which constituted 25 per cent. of the total crime of the Province,—630, as against 742; of theft cases, 770, as against 792; of cattle theft cases 7, as against 9; of cases of assault to deter a public servant from his duty 13, as against 10; and of cases of theft of arms and ammunition 7, as against 3. The year 1930 proved, for the Delhi police in general, and for the Criminal Investigation Department in particular, to be the most arduous they had experienced since the time of the Non-co-operation Movement in 1919-21,—since it was distinguished not only by an unusual amount of activity on the part of terrorist organizations, but also by the agitation against the Salt Law, the picketing of liquor shops, the boycotting of foreign cloth, the non-payment of land revenue, and all the other subversive activities which went to make up Civil Disobedience. No mean task in itself was the amount of surveillance required over the various permanent or mushroom-like political societies operated by the Congress,—such as the Hindustani Seva Dal, the Naujawan Bharat Sabha, the Youth League and Students Union, and the Jamait-ul-Ulema. In addition, the Province was frequently visited by important inter-provincial members of the Congress whose activities, together with those of the local leaders, required attention, and arrests had to be made almost daily throughout many weeks of the year under the ordinary law or the special Ordinances. On the 27th of August, moreover, the members of the All-India Congress Committee had to be arrested in Delhi, and this occasioned considerable excitement and agitation. The serious riots which occurred in the City on the 6th and 7th of May gave the police a very strenuous time, and since owing to the firing on the Sisganj Guru-

dwara they subsequently caused a visit to be made by members of the Shiromani Gurudwara Parbandhak Committee followed by numerous Diwans, the work of the Criminal Investigation Department was much increased, and although the threatened Morcha did not actually materialize, the possibility of its doing so kept the Department on the alert for several months. The total number of political meetings held during the year amounted to 806, as against a mere 60 in 1929. The year was also conspicuous for attempts to seduce soldiers and police from their allegiance. In May, one Chandekar Pershad was caught distributing pamphlets in the New Cantonments, and subsequently Kharag Bahadur, and batches of Gurkhas enlisted by him on behalf of the Congress, were also arrested. These arrests and the subsequent capture of Dhanpatti Singh in Jullundur demonstrated the existence of a widespread conspiracy to seduce Gurkha troops and police throughout Northern India. The Criminal Investigation Department only undertook the investigation of two cases of ordinary crime during the year,—both being alleged embazzlements in Government Departments. Unfortunately the use of the *modus operandi* system had to be temporarily discontinued owing to the pressure of other work; for apart from the activities we have already indicated and the investigation of the terrorist conspiracies which will be described in the next paragraph, the police had to undertake a variety of security duties such as the protection of H. E. the Viceroy and of certain officials of the Legislative Assembly, the Council of State, and the Chamber of Princes, and of numerous social gatherings during the Delhi season such as those at the races, the polo tournaments, the horse, dog, and flower shows, the boy scouts' rally, dances, and so forth.

The endeavours of the Delhi Criminal Investigation Department to combat the activities of terrorist organizations during the year were attended with substantial success, and must be described in some detail. On the 6th of July, at about 10-15 p.m. the daily accounts of the business of Seth Lachmi Narain, proprietor of the Gadodia Stores, Chandni Chowk, Delhi, were being closed as usual. The treasurer and 3 other office hands were sitting inside the treasury room. Suddenly four young men entered, three of whom are said to have been armed with pistols; the fourth was fully known to those sitting in the room, as he also was an employee of Seth Lachmi Narain. After threatening those in the room with pistols, and obtaining the keys of the safe from them, the raiders

took away currency notes and cash to the amount of Rs. 14,200, and while leaving the office, closed its doors from outside and also disconnected the telephone. They had a car waiting for them in the Queen's Gardens nearby in which they made good their escape; while departing they fired some shots to discourage pursuers, but injured no one. Enquiries subsequently suggested that 7 persons believed to be members of a terrorist or revolutionary organisation, namely Azad, Bishambar Dayal, Kailashpatti, Kanshi Ram, Lekh Ram, Vidya Bhusan *alias* Ramesh, and Dhanwantri had been concerned in the commission of this dacoity. There had for some time been reason to suppose that Delhi was the headquarters of an inter-provincial group of revolutionaries, under the command of Azad, but it was not until August that an inspector of police obtained information which eventually led to the capture on the 28th of October of Kailashpatti, *alias* Sital Pershad, who is thought to have been the head of the local Delhi branch of the terrorist organisation,—and who at the time was armed with a revolver and ammunition,—and to the discovery of arms and explosive material in his house. Moreover on the 1st November, when two constables of the Punjab Criminal Investigation Department were patrolling Delhi City, they saw Dhanwantri and another suspected terrorist named Sukh Dev and were simultaneously recognized by them. Dhanwantri and Sukh Dev attempted to escape, but were pursued by the two constables and a foot constable named Mohammad Afzal of the Delhi Police, who happened to be returning from duty at the time and heard the alarm. Dhanwantri, to evade capture, fired at constable Afzal, wounding him in the abdomen; but although armed only with a baton Afzal continued the chase and despite being fired at several times hit Dhanwantri on the head with his baton and felled him. In the confusion Sukh Dev escaped, but he has subsequently been secured by the Punjab Police at Lahore. Dhanwantri was captured with his pistol. For this act of outstanding gallantry, Mohammad Afzal was awarded the King's Police Medal and promoted to the rank of head constable. As a result of these captures and discoveries, a raid was made on the 4th of November on premises in Delhi which were found to contain arms and ammunition and explosive material sufficient for the manufacture of 6,000 bombs. Much light was also thrown by this raid, and by that on Kailashpatti's house a week previously, on the activities of the Punjab revolutionary party in the Bahawalpur Road bomb case, on the six

bomb explosions that occurred in different places in the Punjab on the 19th of June, and on the attempt made to mine H. E. the Viceroy's train in December 1929. The enquiries which were undertaken in connection with these various incidents resulted in the framing of the New Delhi Conspiracy Case, which is at present in progress, and is based on the arrest of Kailashpatti and his main accomplices, the recovery of the explosives already mentioned, the Gadodia Stores dacoity, the shooting by Dhanwantri of Foot Constable Mohammad Afzal, an attempt by one Hazari Lal Pande to shoot Inspector Sardar Sahib Karam Singh in the Queen's Gardens in Delhi on the 31st October, and other important ramifications of the conspiracy in the United Provinces, Gwalior and Ajmer. Of the seven men believed to have been concerned in the Gadodia Stores dacoity, Azad was subsequently shot dead by the police at Allahabad, and in addition to Kailashpatti and Dhanwantri, Bishambar Dayal and Vidya Bhusan have been arrested. Bishambar Dayal however died after arrest from appendicitis. Kanshi Ram and Lekh Ram at the end of the year were still absconding. Another political revolutionary case came to light during the year as the result of the arrest of Mansa Singh, Kishon Dhander and Inder Singh, under section 19 of the Arms Acts. It was believed that the first man had committed a political dacoity in Ambala district, attended by murder, and the facts obtained by the Delhi Criminal Investigation Department have enabled the Ambala Police and the Punjab Criminal Investigation Department to work out the Manauli Dacoity Case, and effect the arrest of all those who had been believed to be members of this gang with one exception. The distribution of revolutionary pamphlets entitled "Philosophy of the Bomb Manifesto" was also taken up by the Criminal Investigation Department during the year, and from the information supplied, it is believed that the Government of India's Intelligence Bureau was enabled to discover the printing press and other useful facts. During the year five bombs and crackers exploded at various times in different parts of Delhi. The most serious and unfortunate case was the explosion of a powerful bomb near the waiting room in Delhi Station on the 26th of December, caused the death of a liftman, and injured some waiting room bearers. The bomb explosion near the Tibbia College on the 3rd of December also caused injuries, two of the College students being wounded by it.

In the Madras Presidency* the number of true cases of cognizable crime under the Indian Penal Code during the year, excluding nuisances, amounted to 47,663 as against 46,654 in 1929. Madras City and fourteen Districts contributed to this increase. The largest number of cases, as usual, was reported from Madras City. The number of murders increased from 912 to 985; of dacoities from 189 to 207; of robberies from 611 to 641; and of housebreaking from 7,386 to 7,594. Cases of theft however declined from 17,264 to 17,096; and of cattle theft from 3,095 to 2,933. The figure for coining remained the same as in the previous year, 20 cases having been reported. Despite the peculiar distractions of the year, the previous year's standard of detection was maintained, the ratio of true cases of cognizable crime under the Indian Penal Code,—other than nuisances,—which ended in conviction to those disposed of during the year being 37·8 per cent., as against 37·5 per cent. in 1929. The two parts of the Presidency in which the increase in crime was most marked were the Kistna and Tinnevelly Districts. In the former, the trouble was undoubtedly due to the spirit of lawlessness engendered by political agitation, and to the fact that police station staffs were insufficiently strong to deal with their ordinary work, owing to the distractions to which they were subjected by the peculiar circumstances of the time. But from September onwards the disturbed conditions in this District were energetically dealt with and the volume of crime had been reduced to normal before the end of the year. The increase in crime in Tinnevelly District was due to the depredations of certain gangs of criminals against whom effective action has since been taken. There was a substantial fall in the total number of "nuisances" dealt with during the year, the figure being 126,359, as against 172,623,—owing chiefly to the fact that the police were too preoccupied with other matters to give them their usual attention. The extent and cause of their preoccupation is clearly indicated by the year's returns for rioting. The number of cases rose from 476 to 1,407,—a total only exceeded by Bengal and the United Provinces. The percentage increase of rioting cases in the Madras Presidency, as against the previous year, was therefore no less than 196; on the

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* This includes Madras City. The report of the Inspector General of Police for the Presidency deals with events that occurred in the City; the report of the Commissioner of Police for the City is however published as an Appendix to it.

other hand in Bengal and the United Provinces it only amounted to 51 and 39 respectively; moreover it should be borne in mind that the disturbances in the Madras Presidency subsided sooner than in most other Provinces, and were thus crowded into a smaller number of months. The situation which confronted the Madras police in the early summer of 1930 was therefore much more serious and unusual than seemed to be generally realized in other parts of India at the time. The activities of the Congress quickly created an atmosphere of lawlessness and defiance to constituted authority in many parts of the Presidency which necessarily resulted in numerous outbreaks of violence; and the brunt of everything was borne by the police. Continuously overstrained and overworked, abused in the press, on the platform, and by the public, and exposed to taunts and insults and attempts to seduce them from their allegiance, they nevertheless emerged from a period of trial with their duty well and faithfully performed, fortified in their loyalty and with their morale unshaken. Grave rioting leading to bloodshed, and necessitating firing by the police, occurred at 9 different places in the Presidency during the year,—at some of them on more than one occasion; and except at Tindivanam,—where a small force of station police fled before a mob and were pursued and cruelly ill-treated,—the police acted promptly and with restraint and good discipline during each one of these riots. Innumerable other minor disturbances which resulted from the Civil Disobedience Movement were also effectively dealt with. The rioting in Madras City occurred on the 22nd and 27th of April, and assumed serious dimensions. On the 19th of May, at Gudivada, a large and infuriated mob attacked a party of Reserve Police under Mr. W. F. A. Hamilton, probationary Assistant District Superintendent of Police, with the object of rescuing certain political prisoners, and after a struggle lasting for over two hours, during which the police showed admirable courage and restraint, the mob had to be dispersed by gun fire. In Ellore, in June, a crowd of 3,000 labourers and others, armed with sticks, made a most determined attack upon the Reserve Police; when it appeared that they would be overwhelmed, the police had to open fire, and one man was killed and 25 others wounded. At Sholinganallur, in Chingleput District, in June, a mass attack by a mob on a small police party under a sub-inspector necessitated the police opening fire after several of them had sustained injuries; one of the rioters was killed. Illicit salt manufacture led to grave rioting at

Tindivanam in June. Here an inspector and 17 men, only a few of whom were armed, had to face the attack of a large and excitable mob, and after opening fire somewhat belatedly the police broke and fled, those who were caught being mercilessly beaten; a good deal of damage was done by the mob to Government buildings and property; the situation was eventually saved by the arrival of the District Superintendent of Police with reinforcements. In July, a large and turbulent mob attacked the police station and *taluk* office at Cudiyattam with a view to rescuing six Congressmen who were under arrest; the sub-inspector in charge of the station with a small number of men displayed great resource, but eventually had to open fire. At Kumarapalaiyam, in the same month, a toddy shop was defended by an inspector with a force of only 6 men against a determined attack by a mob of 3,000 strong; the police stood their ground despite the fact that some of them had sustained serious injuries, and they had the situation in control when reinforcements arrived; four of the rioters were injured. Picketing of liquor shops led to four riots in Madura town during the year, in which two people were killed and several injured; two of the riots were serious; on each occasion the town was saved by the resource of the Deputy Superintendent of Police, Mr. Jagadisa Ayyar, and the men under his command, who however were obliged to open fire. A serious riot arising out of the picketing of toddy shops occurred in August at Bodinayakkanur, when a huge mob of rioters attacked a small force under a probationary Assistant District Superintendent of Police,—Mr. A. E. D. Frederick,—who, in spite of his youth and inexperience, acted with commendable courage and discretion; the police at his command also rose to the occasion excellently; two rioters died as the result of police firing. There were also several riots of a communal nature during the year, and the relations between the two communities were in places distinctly strained. The most serious disturbance of the year occurred at Vellore on the 8th of June, as a result of the passage of a Muhammadan procession with *tazias* near a Hindu temple; so violent was the conflict between members of the two communities that the police were compelled to open fire in order to restore order; and sporadic fighting continued in the town during the next two or three days. In Salem town, owing to Hindu-Muslim tension a dispute arose on the 13th of July, as to who had been the victor at a largely attended Hindu-Muslim wrestling match at Shevapet. Another riot occurred

in October at Kitchipalaiyam of Salem town; the trouble arose from a few Muhammadans disturbing a street game played by some young Hindus. Hindu-Muslim disturbances also arose in Polikal village, Kurnool District, on the 15th of March, owing to a dispute about the route of a Hindu procession, but the rioters were easily dispersed by a small force of police. The factious quarrels between the Hindu and Christian Nadars at Pallipathu, in Tinnevelly District, culminated in a riot in which the Christians used a gun; and a riot also occurred between the Devangu Chetties and the Nadars at Arruppukkottai, in Ramnad District, on the 2nd of October, in which a Nadar was stabbed to death. During the year a new armed police force, called the Presidency General Reserve, with a strength of 664 men, whose establishment was temporarily sanctioned on the 24th of June, was duly enlisted and trained. The want of such a force was acutely felt in April, May and June, when it was only possible to mobilize sufficiently large forces in the more disturbed regions by stripping other areas of their armed forces and leaving them helpless against the emergencies that might have arisen there. Experience having shown that general lawlessness even in a few Districts is liable to create a situation beyond the capacity of the small District armed forces to deal with, the Government sanctioned the establishment of the new force on a permanent basis from the 1st April 1931. It is gratifying to be able to record that there was no occasion for complaint concerning the conduct of village officers during the Civil Disobedience Movement during the year,—except in a few villages in Nellore District and the Kistna and Godavari Delta Districts, where some village magistrates resigned their appointments on political grounds,—and many village officers rendered loyal and useful services to the police when the Movement was at its height. The Presidency was comparatively immune from terrorist outrages and bomb explosions during the year. In Anantapur District, a villager was injured by a live bomb of a crude type which had been manufactured to serve factious ends in the Cuddapah District, and a messenger was blown up and killed while carrying another such bomb; four other cases of bomb manufacture came to light in the same District. There were two instances in Madras City of the explosion of bombs believed to have been crudely manufactured for political purposes. Apart from the acts of gallantry performed by the police which we have incidentally mentioned when describing the riots which took place during the year, a large

number of others occurred which we have not space to enumerate. No less than 52 members of the force were injured while on duty during the year,—some of them very seriously, and one of them subsequently died.

In the first two Chapters of this Report we have devoted some space to discussing the very serious and peculiar disturbances which took place in the North-West Frontier Province during the year, and we shall therefore be unable to recapitulate the history of these disorders here. Reference can only be made, *en passant*, to certain individual incidents, in order to indicate the origin and significance of the difficulties with which the police had to contend. As was explained in Chapter I, the organisation of the police in the North-West Frontier Province is not the same as in the other Provinces of British India, since, in addition to the ordinary civil police force,—which incidentally is more extensively armed than in other parts of the country,—the Province is served by a special body known as the Frontier Constabularly, whose functions are intermediate between those of the civil police and the army. We will describe the activities of this special force first. During the year under review, owing to the acute unrest which prevailed, the constabulary was engaged not only in a number of important operations within the sphere of its own normal activities,—that is to say along the actual border line,—but also on internal security duties in support of the civil police within the settled Districts. In the months of May and June every available member of the force had to be employed in *cis*-border police work throughout the whole length of the Province, and drafts were maintained in the Bannu and Shabkadr areas until late in the summer. The strain which these unusual duties imposed on the force was great. Frequently all the men who could be spared from their normal work were suddenly rushed to some place in the interior of the Province in which a disturbance was anticipated or had occurred, and generally there were no reserves available to relieve them; moreover many members of the force, particularly those drawn from the trans-border regions, had only the haziest idea what the trouble was about, and instead of being armed with rifles, they found themselves provided only with *lathis*, whose uses they did not understand. Nevertheless these rough and ignorant sepoys, trained only to the use of firearms against raiders and other external enemies of Government, managed to carry out the strange and

distasteful duties imposed on them without loss of temper in extremely trying conditions, and with a quiet efficiency that was most praiseworthy. The work which they accomplished during the year within their own customary sphere of action was equally meritorious, and would in itself have been quite sufficient to keep them strenuously occupied,—as the reader will readily appreciate from his recollection of our account, in Chapter I, of the hostilities and tension that prevailed along the border throughout the summer. During May, and subsequently, the constabulary in the Shabkadr area had a most trying time, patrolling the border day and night, and constantly exposed to threats of ambush. On the 2nd of June, a party of 50 men were despatched towards Minchni in motor lorries, and were expected to return to Shabkadr after dark; they did not in fact do so, but the lorries were sent back empty, and when nearing Shabkadr were met with a fusillade of bullets, and two out of the three drivers were killed; the lorries were then set on fire. During the early part of June the Oghi constabulary were engaged in desultory actions with hostile tribesmen in the Agror valley, which were successful. The same however cannot be said of the actions against the Afridis during their first raid on Peshawar at about the same time, since the available force there had been too heavily depleted of men required for internal security duties to be really effective; such as there were, however, co-operated effectively with the Nowshera Column in searching the area round the Mohmand Tappa and expelling hostile tribesmen. Warning of the second Afridi incursion in August, on the other hand, was received in time to enable all the available constabulary to be placed on the border between Nari Khwar and Jola Talao, and this line was held by constabulary pickets,—although in skeleton strength,—for ten nights in succession; these pickets engaged the raiders four times at night and once by day, and inflicted considerable casualties. The most successful encounter was on the night of the 9/10th August, when a gang of Afridis, about 200 strong, advancing towards Sheikhan village from the direction of Akhum Talao, passed close to a constabulary picket of 30 men under Subedar Yusuf Shah Wazir and suffered considerable losses including one man left dead. The exceptional difficulty and complexity of the tasks undertaken by the Frontier Constabulary during the year is indicated by the fact that although the force suffered many casualties, no exact statement of the

number of men killed or injured while performing their duties can as yet be made. Numerous members of the force were diverted from their normal work and sent off on special jobs, and the reports sent in were incomplete. We must now turn from the Frontier Constabulary to consider the work of the Civil Police. Owing to the unprecedented political agitation which was in progress throughout the Province, this force also had extremely difficult situation to contend with throughout the last nine months of the year. As a result of the intensive propaganda carried on by Abdul Ghaffar Khan and his followers, and the activities of bands of " Red Shirts " or " Black Shirts ",—particularly in Peshawar and Bannu Districts,—the tendencies which had been developing during the first three months of the year throughout the rest of British India assumed serious dimension in the Frontier Province with great rapidity, and,—as was to be expected where a population largely Pathan in origin was concerned,—gave rise to serious outbreaks of violence and disorder at an early stage. The first clash occurred in Bannu on the occasion of the arrest of the Secretary of the local Congress Committee on the 8th April for making a seditious speech; as a protest against his arrest a mob surrounded the police station, destroyed the garden, and threw stones at Europeans playing golf nearby; the next day a mob 500 strong had to be dispersed by police and constabulary with *lathis.* Meanwhile in Peshawar itself the tension was daily increasing. On the 23rd of April, owing to the stream of seditious speeches, pamphlets and posters which had been pouring forth, the leading agitators in the city had to be arrested, and it was as a result of the attempts of the mob to release these prisoners that the very serious riots which have been described in Chapter I broke out. While they were in progress Mr. Garrod, Assistant Superintendent of Police, Peshawar City, was heavily stoned, sustained a fractured jaw, and only extricated himself from the frenzied mob by a fine display of horsemanship; and Inspector Bashir Ahmad, in coming to the aid of an officer of the Royal Tank Corps whose revolver was being snatched by the crowd, was shot in the thigh and had a finger blown off. After the riots had been suppressed, intense anti-Government feeling was aroused throughout the Province by agitators who exaggerated and misinterpreted the measures which had been adopted to deal with them, and this gave a great impetus to the enrolment of " Red Shirts ", who were soon to be found

in many villages of the Peshawar District. In the clash which occurred on the 25th of May with a mob of 2,000 people near Mardan, Mr. Murphy, Assistant Superintendent of Police, in attempting to disperse the crowd, was killed. Another clash had occurred shortly before, on the 13th, at Thall in the Kohat District, where police who were arresting agitators were surrounded by an excited mob 300 strong; a platoon of troops, however, fortunately arrived on the spot with fixed bayonets at the critical moment, and the crowd dispersed. On the 30th of May an increase in disorder in Dera Ismail Khan led to certain arrests being made, in the course of which shots were fired at the police from the roofs of houses, but there were no casualties. In dealing with the disorder in the rural areas it was found necessary to blockade several villages in the Peshawar District with troops, Frontier Constabulary, and civil police, and to close certain roads, bridges and ferries, to general traffic; and on two of these occasions firearms had to be used. Owing to the rapid spread of disaffection throughout the Province a force of 1,200 additional police had to be raised in May to deal with what by then amounted to open rebellion, and they were very fully employed during the course of the summer. When the Afridi tribesmen, in August, for the second time invaded Peshawar District, and approached the city, the police held the walls and beat off a determined attempt at entry, inflicting several casualties on the enemy. In Bannu, at the end of August, the troops had to be called out to assist the police in dealing with an armed and defiant mob of 400 tribesmen, and, as we have described in Chapters I and II, a sanguinary conflict ensued, in which 40 tribesmen were killed and a large number wounded; the military on their side suffered 20 casualties, including 11 killed. Throughout the course of the summer's disturbances bombs were extensively used by the malcontents for the first time in the history of the Province. Over a dozen bombs were exploded on the railway line or in the houses of loyalists; one bomb, which was placed in the residence of the Inspector of Police in Bannu City, and exploded, was prevented from causing loss of life or serious damage by the prompt action of a constable. As was to be expected under the circumstances, the amount of serious crime reported in the Province during the year showed a substantial increase, and since the police were so pressed with work outside the scope of their ordinary duties, the crimes actually committed must have

been far more numerous than the available figures show. The prevailing confusion and disorder gave bad characters the chance of conducting criminal operations with exceptionally little risk to themselves, and the number of murders, dacoities, robberies, and burglaries that occurred was deplorable. As regards murders, the number reported was 534, as against 447 in the previous year. In the Bannu, Kohat, and Peshawar Districts there was an average of 3·5 murders for every 10,000 of the population,—a figure five times larger than that reported for any other Province of British India. Firearms were used in connection with no less than 45 per cent. of these murders,—a disturbing fact. The number of dacoities reported was 121, as compared with 53, and of robberies 236, as against 169 in the previous year. As many as 859 more burglary cases were reported. The total number of true cases dealt with during the year was 8,862 as against 6,581. Among them were no less than 1,329 cases of a political nature, of which 988 were reported from the Peshawar District alone. In such circumstances it is not surprising that the prosecution staff were unable to devote the same attention to ordinary cases as in normal years, and the percentage of convictions to true cases dropped from 58·5 to 49·1. Among the minor troubles of the year was a persistent cutting of telegraph wires in the Charsadda sub-division of the Peshawar District; as many as 72 more cases under the Telegraph Act were reported. An indication of the strain which was imposed on the civil police in the Frontier Province during the year can be obtained from the fact that among officers of the force alone, one was killed and four injured in the performance of their duties during the year. But despite the danger to which all members of the force were exposed, and the fact that they had to work for exceptionally long hours on irksome and unusual tasks in the heat of the summer sun, their spirit remained wonderful and they may be said to have come through the year with the greatest credit.

In the Punjab, the total number of true cognizable cases of all kinds dealt with by the police during the year was 48,027, as compared with 48,896 during the previous year. The figures of petty crime, however, decreased substantially,—in part owing to the preoccupation of the police with activities arising out of the Civil Disobedience Movement,—and if these are eliminated from the total there was actually an increase of no less than 1,234 in

the number of true cases dealt with. This increase, it should be noted, related entirely to the Central Range, where political agitation was most intense. In view of the fact that the conditions that prevailed during the year were so unprecedentedly favourable to the criminal, the actual statistics may be considered satisfactory. But circumstances were such that a considerable number of offences were doubtless not reported; moreover preventive work on the part of the police,—the importance of which is often insufficiently appreciated,—suffered a serious set-back, and some time must of necessity elapse before the ground lost can be regained. As regards rioting, there were 907 cases during the year as compared with 813 in 1929. Many of them were of a communal character, and the tension between the two principal communities remained acute in many parts of the Province. True cases of murder amounted to 664 as against 679. The decrease was satisfactory, but does not alter the fact that the murder statistics for the Province are still exceptionally and deplorably high. Many of the cases described by the Inspector-General of Police in his report were peculiarly savage and vindictive, and it is evident that a considerable section of the population of the Province regards the taking of human life as of little account. A number of the murders perpetrated were directly or indirectly attributed to political causes, and several attempts at assassination were made by members of terrorist organisations,—some of which were successful. Among the more serious outrages committed during the year the following may be mentioned. On the 9th of May, a police party under the supervision of a magistrate went to the shop of one Bhanjo Ram in the Godri Bazar, Multan City, to execute attachment warrants for the realisation of water-tax. The Deputy Commissioner and Superintendent of Police were also present. Suddenly a bomb was thrown from the roof and exploded at the Superintendent's feet, injuring him, a head constable, 4 constables, and 2 members of the public. The culprits were apprehended and convicted. On the 4th of October an attempt was made to assassinate Khan Bahadur Abdul Aziz, C.I.E., an officer on special duty with the Criminal Investigation Department. He was driving in his car near the canal bank at Lahore, when he was fired at from behind some bushes. His orderly was fatally and the driver of the car slightly wounded. The officer himself escaped. On the 23rd of December an attempt was made to assassinate H. E. the Governor of the

Punjab at the University Hall in Lahore. One Hari Kishen fired six rounds injuring His Excellency, assistant sub-inspector Chanan Singh, Miss MacDermott,—a member of the Women's Medical Service,—and Inspector Budh Singh. Sub-inspector Chanan Singh later succumbed to his injuries. The assailant was captured on the spot and has been sentenced to death. On the 13th of January 1931 Mrs. Curtis, wife of Captain Curtis, I.A.S.C., was sitting in the verandah of her bungalow in Lahore Cantonment when a Sikh named Sajjan Singh entered and attacked her with a sword. Mrs. Curtis succumbed almost immediately, and her two children were also severely injured. Sajjan Singh was captured and has been sentenced to death. A conspicuous and deplorable development during the year was the extent to which those who perpetrated outrages of this kind,—most of whom belonged to the educated or semi-educated classes,—received the support and sympathy of the press and of those actively engaged in assisting the Civil Disobedience Movement. As regards dacoities the number increased during the year from 143 to 205, largely owing to the spirit of lawlessness and unrest that prevailed. Despite this, however, the force was successful in disposing of a number of dangerous dacoits during the year. On the 5th of March one Harphool—an outlaw who had terrorised some of the Eastern Districts of the Punjab by committing several brutal murders and dacoities, was arrested at Jaipur State by the Rohtak Police. On the 29th of August, an inspector at Arifwala police station, Montgomery District, was informed that two absconders were present in the village. The inspector accordingly set out, accompanied by a party composed of armed police and members of the public, and proceeded to the spot, where they found the absconders,—Sadhu Singh and Labh Singh,—asleep, and secured both of them. Sadhu Singh, who was wanted in connection with a series of murder cases, had a loaded double-barrel gun on his bed. On the 4th of November it was reported to the police that two suspicious persons said to possess arms were staying in the house of one Dial Singh in Dharampura village, Lahore District. A police party was accordingly organized under the charge of an inspector, and was successful in arresting one Tehl Singh, a motor driver of Bhungali village, who was in possession of a pistol and ammunition. While the raid was in progress shots were exchanged, and Bishasher Nath, the companion of Tehl Singh, and an absconder

in a revolutionary conspiracy case, was wounded; after being brought to the Mayo Hospital, Lahore, he died. Burglary continued to be widely prevalent during the year, the number of cases increasing from 13,619 to 14,874. In recent years the *modus operandi* system of detection, as we have indicated in previous Reports, has been in regular use in the Punjab as in some other Provinces, and proved very successful, the number of burglaries having declined by nearly 5,000 between 1922 and 1929. In view of the innumerable other claims which were made on the attention of the police during the year under review, the increase in burglary cases, though reprettable, was less than might have been expected. But the use of the *modus operandi* system undoubtedly suffered a set-back. As regards theft, the total number of reported cases was 5,860 as against 5,982 in the previous year. At the end of the year there was a substantially larger number of proclaimed offenders at large than in December 1929, the figures being respectively 3,494 as against 3,213. This of course is only one of the many indications that can be obtained from the available figures of the implications of the Civil Disobedience Movement. Another significant fact is that 7 members of the police force were killed and 5 seriously injured during the year while performing their official duties. Numerous cases of minor injury were also reported.

In the United Provinces, the Civil Disobedience Movement was formally inaugurated on the 7th of April, when the Salt Laws were ceremonially broken at Agra. Similar celebrations were soon indulged in in other towns, but it was not long before the local leaders began to direct the attention of their followers to other and less innocuous aspects of the Congress programme, such as the boycotting of foreign cloth, the picketing of liquor shops, and the refusal of rent and taxes. As was to be expected when large numbers of illiterate or semi-educated persons were enrolled for the express purpose of defying constituted authority, and maintained, by constant exhortation and propaganda, in a state of unnatural excitement, outbreaks of violence soon began to occur. On the 26th of May a serious riot occurred in Lucknow, when a crowd incited by Congress workers attempted to set fire to the police outpost at Aminabad. The police, in dealing with the very dangerous situation which developed, were forced to open fire. On the 11th of July a serious affray took place at Soron in Etah District, when a mob of Congress volunteers attacked an

Aman Sabha meeting. The District Magistrate, who was present, was eventually forced to order the police to fire on the mob; five persons were killed and fifteen others injured. On the 13th of July, in Meerut District, a sub-inspector and two constables were attacked by a mob of 500 villagers when attaching property on a distraint warrant. The sub-inspector was forced to use his revolver in self-defence, and one of his assailants was killed. On the 12th of September, there was a very serious attack on the police station at Gulaothi in Bulandshahr District, which was assailed by a riotous mob 8,000 strong. The sub-inspector in charge, Raza Ahmad Khan, sallied out and endeavoured to pacify the mob, but was felled to the ground by *lathi* blows and beaten to death on the spot. An armed police guard that came to assist him forthwith opened fire and killed a number of the sub-inspector's assailants. The mob then broke and fled. On the 26th of September, when elections for the Legislative Council were in progress in the Town Hall at Moradabad, a large crowd of Congress sympathisers stormed the hall and tore up the ballot papers. The police, who arrived on the scene, were roughly handled, and in the end were forced to open fire. The crowd suffered several casualties and dispersed. On the 16th of December, the Superintendent of Police, Fatehgarh, when marching through part of Mainpuri District with a small force of armed police to another part of his own District, was attacked by a large crowd of Congress volunteers, and forced to open fire on his assailants.

This account of such of the year's riots and disorders as arose out of the Civil Disobedience Movement in the United Provinces is by no means exhaustive, but considerations of space necessitate our leaving the substantial number of the other serious disturbances that occurred unrecorded. The total number of cases instituted as a result of the Civil Disobedience Movement during the year was 5,257; of these 4,645 ended in conviction and 612 in acquittal; apologies were tendered in 663 cases before trial and in 1,171 cases after conviction. As regards crime in general, the total number of true cases reported during the year was 132,429, as against 155,451 in the previous year. This decrease was no doubt in part due to the fact that the police were so preoccupied with the unusual tasks assigned to them that numerous crimes were not detected or reported; but there were other factors also involved. Since the price of food grains was exceptionally low throughout

the year, a considerable section of the habitually criminal classes found it unnecessary to supplement their means of livelihood in their usual way; in addition, among the large numbers of people who were enrolled as Congress volunteers, and provided with food, and, as a rule, a small daily allowance, were many who were on the verge of destitution, and who might, had they not been employed by Congress, have turned to criminal activities. It should moreover be borne in mind that the more ardent followers of the Congress were unwilling to seek the aid of the police in connection with crimes which they knew had been committed. The most noteworthy features of the year's criminal statistics were rises in the figures for rioting, (from 1,428 to 1,776) and for dacoity, (from 706 to 727), and decreases in the other important classes of crime; murders declined from 829 to 761, robberies from 705 to 593, burglaries from 43,660 to 36,213, and thefts from 20,492 to 17,517. The special dacoity police had a markedly successful year, and within the boundaries of the United Provinces brought a large number of cases to a successful conclusion in court. Their active operations however took place almost entirely outside the Province, and were directed against the dacoit gangs of Dholpur and Northern Gwalior. The campaign in this region, ever since it began in May 1929, has been unusually dangerous and resulted in many casualties, for the ground is peculiarly difficult, and the dacoits are well armed with modern magazine rifles; the supply of ammunition at their disposal, moreover, is almost unlimited. By the end of 1930, 7 police officers, 8 friendly villagers or informers, and 14 dacoits have lost their lives in the course of these operations. During the numerous encounters within the twelve months under review many of the remaining leaders of the gangs in this area were captured or shot, and the efficacy of those who escaped has been much reduced. The most noteworthy action against dacoits during the year occurred on the 20th of August, when a small patrol, consisting of one constable of the Special Dacoity Police, two armed constables from Agra, and a Gwalior military policeman, came in contact with a combined gang of dacoits led by Balwanta and Shama, at about 2 A.M. in pitch darkness. The action continued until daybreak, when the early light revealed the police as complete victors, with Shama and Balwanta shot dead and five excellent weapons, about 300 rounds of ammunition, and seven ponies, abandoned. One of the

constables, however, was killed. Although communal tension in the Province during 1930 was not nearly so acute as during the first three months of 1931, and was for a while overshadowed by the excitement engendered by the Civil Disobedience Movement, indications of it were fairly numerous, and the causes of disagreement remained as potent as ever. In Dehra Dun and Bulandshahr there were communal riots of the usual type, and a very serious riot occurred in Ballia city as a result of a dispute concerning the route taken by a Hindu procession, which necessitated firing by the police. In Muttra, Azamgarh, Mainpuri and several other places riots also occurred. As regards the year as a whole, it can be said without hesitation that it was the most difficult the police have experienced. They were required to spend exceptionally long hours on duty both during the hot weather and the rains; food could only be supplied irregularly, reliefs were unobtainable, and leave was as a rule refused except for medical reasons. In addition, every effort was made to seduce them from their allegiance; they were openly abused and vilified, and frequently assaulted; shopkeepers occasionally refused them supplies, and menial services were denied them; even their wives and families were frequently subjected to social boycott. Yet despite these extremely unpleasant circumstances the behaviour of the force was magnificent, and the exacting duties its members were called upon to perform were carried out with devoted loyalty. The seriousness of the personal dangers to which they were frequently exposed is indicated by the casualties they suffered during the year, which amounted to 10 killed and 495 injured.

Although no major revolutionary outrage was committed in the United Provinces during the year, the number of minor incidents of a terrorist nature was so unusually large as to require a separate paragraph for their description. The state of affairs was such as to require unremitting vigilance from the police, and their duties were rendered the more difficult by the fact that the notorious C. S. Azad and other suspects, most of whose activities were conducted in Jhansi or Cawnpore, had sympathizers in Gwalior with whom they could take refuge when alarmed. Benares was also the scene of a good deal of revolutionary activity. It was here that Vidya Bhushan, who was suspected in 1929 of the theft of arms from members of Benares Hindu University, was arrested in connection with the Delhi Conspiracy Case, and seditious lite-

rature appeared in the city on several occasions,—copies of a Hindustan Socialist Republican Army leaflet being distributed in the University on the eve of "Independence Day", and also the "Philosophy of the Bomb" leaflet, which appeared in educational institutions in several other large towns also. Manuscript notices giving instructions on the preparation of bombs were discovered not only in Benares, but also in Jhansi, Cawnpore, Farrukhabad, and other places. Among the very numerous occasions on which amateur bomb-making or other terrorist activities were actually indulged in as a result of the new knowledge acquired were the following. In Agra, a boy was injured on the 5th of May by the explosion of an object which he picked up on the road. On the 31st of May a boy named Radha Kishan was seriously injured in Cawnpore by an explosion while Arjun Prasad Arora, a son of a well-known Congress agitator, was trying to make fulminate of mercury. On the 28th of June in Etawah, a boy was seriously injured by the explosion of a phial which he picked up. On the 8th of August, in Jhansi, Laxmi Kant Pande, a resident of Cawnpore, was arrested with a dangerous bomb and a loaded pistol at the residence of the Commissioner, whom it was his intention to kill. He has now been convicted. On the 12th of September two residents of Firozabad were injured by the explosion of a bottle. One of them died and his companion was prosecuted. In Bulandshahr, on the 27th of September, a man received fatal injuries while preparing explosive substances. On the 28th of September, a crude bomb was found on the road near the house of the Superintendent of Police, Ballia. On the 16th of November a bomb was thrown into the Kotwali, Cawnpore, but though it exploded, it did no damage. Benares was the scene of numerous bomb outrages of varying importance. On September 8, a powerful bomb made in a barley flour tin, which had been placed on a small embankment behind the Durga Kund Police outpost, on being picked up by an old woman, exploded and killed her. On October 1, a crudely-made bomb of a similar type, which had been fastened by means of a piece of string to the door of a sub-inspector's quarters, exploded when the door was opened,—fortunately without injuring anybody. On the 27th of December, a bomb exploded at the North-West corner of the Benares Chowk police station but did not cause serious damage. As regards the arrests effected, and the encounters that occurred between the police and revolu-

tionaries, the following incidents may be selected for mention. On the morning of the 1st of December, in Cawnpore, a party of police proceeding to arrest Sada Shiva Potdar, an accused in the New Delhi Conspiracy Case, met a youth named Salig Ram Shukla, a prominent absconding member of the Hindustan Socialist Republican Army group. He was challenged by Inspector Shambhu Nath, and promptly opened fire on the police, with the result that Mr. Hunt, Assistant Superintendent, and a head constable were wounded and a constable killed. Shukla was shot dead. Besides the revolver he used, there was found, near the scene of his death, a bag containing a loaded service revolver with 30 rounds of ammunition and a Webley air pistol. Three days later Nand Kishore Nigam, M.A., an absconder in the Delhi Conspiracy Case, was arrested in a library in Cawnpore by the Special Superintendent as a result of some clever detective work by Thakur Bisheshwar Singh. At the time of his arrest he was carrying a fully loaded revolver and 20 rounds of spare ammunition; he also had on him a paper containing formulae for the preparation of explosives and a sketch of a bomb. Seven other supposed members of revolutionary organisations were arrested before the close of the year, all of whom were wanted in connection with the Gadodia Stores dacoity in Delhi, which has already been described. In addition, on the 11th of February 1931, V. R. Vaishampayan was arrested in Cawnpore, and on the 27th Azad himself was shot dead by Mr. Nott-Bower in an exciting affray which took place in Alfred Park, Allahabad.

At the beginning of this Chapter we enumerated the various administrative subjects which have come to be delegated, during the course of Indian constitutional evolution, from the Central to the provincial Governments, and explained that, under the Montagu-Chelmsford Reforms, four of them, namely Law and Order, Forests, Irrigation, and Land Revenue were "reserved" from popular control. Of these, the first has now been discussed at length, and the second and third, having been dealt with in an earlier Chapter, require no further attention here. Before passing on to the "transferred" subjects, therefore, we have only Land Revenue left to consider. This is an immense, fascinating, and intricate subject, and in later issues of these annual Reports we hope to be in a position to explain its ramifications in some detail. Hitherto, however, it has been the practice, when dealing

with Land Revenue in the corresponding chapters of our previous volumes, to attempt nothing more than a mere enumeration of such changes in the legislation affecting it as have been made during the period under review, and on this occasion, owing to the exceptional amount of space which has had, of necessity, to be devoted to the subject of Law and Order, we cannot undertake to pass beyond these somewhat drab limits. A good deal, of course, has been said incidentally concerning Land Revenue in other parts of this Report,—particularly at the beginning of Chapter III,—and the reader will have been enabled, from these passages, to form some idea of the immensely important place which this subject occupies in the Indian administrative system.

During the period under review, fewer changes or developments took place in connection with Land Revenue legislation than for some time past. In Assam, the question of introducing fresh legislation concerning assessments has been under consideration for several years. In March 1930 a Bill was duly brought forward, and after being reported on by a Select Committee of the Legislative Council was passed in September 1930. The measure as passed, however, was not acceptable to Government in regard to the maximum pitch of assessment, which was fixed by the Council at 10 per cent. of the value of the gross produce as against the 12½ per cent. proposed by Government. The latter figure had been agreed upon as the result of a compromise with the representatives of all parties in the Council, and Government felt that in these circumstances they would not be justified in accepting the sacrifice of public revenue which adoption of the lower figure would involve. The Bill was accordingly returned by the Governor for reconsideration by the Council, but the latter refused to accept His Excellency's recommendation. The Governor has not given his assent to the Bill. In Madras, it will be recollected that a measure known as the Malabar Tenancy Bill, embodying the conclusions reached by the Government as a result of a conference held with representatives of the landlords and tenants, was passed by the Legislature during the period covered by our previous Report; this Bill received the assent of the Governor-General during the year under review. The only other development of importance in connection with Land Revenue legislation occurred in the North-West Frontier Province. When the settlement operations in Peshawar District were concluded in June 1930, an

address was presented to the Chief Commissioner asking that the Punjab Land Revenue (Amendment) Act, 1928, should be extended to the Frontier Province with a view to the reduction of the assessments. The Commissioner in replying gave an assurance that the rates established would not on the whole be higher than in the Punjab, and undertook to re-examine the re-assessment proposals of Peshawar District in accordance with the provisions of the Punjab Act. As a result of this, the total demand was reduced in November by Rs. 66,000 in the seven circles of Peshawar District in which the revised rates were found to exceed the limits prescribed under the Punjab Act. Elsewhere nothing of particular interest from the legislative point of view took place, and the year was chiefly remarkable for the substantial remissions of land revenue which were made throughout the country as a result of the exceptional economic depression which prevailed.

We may now proceed to consider the "transferred" subjects, —taking Local Self-Government,—to which some reference has already been made in Chapter III,—first. From time immemorial there have existed in India indigenous institutions which have undertaken some of the functions of local self-government,—though it is true that, since they had no elective basis, few recognized duties, and no direct connection with the main administrative structure, there has been little resemblance between them and the local bodies that exist in modern democratic countries. Moreover during the period of administrative disintegration which preceded the establishment of British rule, and of rather hurried and arbitrary centralization that followed, little attention was paid to the potential importance of these traditional village bodies, with the result that when their possible utility began to be recognized, in the latter part of the XIX century, they had almost ceased to function. In 1882, Lord Ripon's administration made a determined attempt to revive such local self-governing institutions as remained, and issued a resolution declaring that the people should be trained in the management of their own affairs, and that political education ought, as a rule, to be given preference over departmental efficiency. This well-meant effort, however, did not yield much result. The infant local bodies were at first inevitably under official guardianship, which rendered work in connection with them less attractive to many public-spirited men, and the growth of ini-

tiative and self-reliance among those for whose benefit the system was devised was accordingly slow.

Since the control of local self-government was handed over to responsible Ministers under the Montagu-Chelmsford Reforms, more appreciable progress has been made. Many fresh laws have been enacted, municipal bodies re-constituted on more popular lines, municipal franchises extended, and the powers of local bodies enhanced. In several parts of the country the old village *panchayats* or committees of elders, have been revived, and placed on a modern legal basis and provided with more definite powers and functions. In certain regions the tendency has been to amalgamate the revived or newly-founded *panchayats* and call them "Union Boards". These changes naturally aroused some criticism and misgiving and some of the new bodies have proved failures, but it should be remembered that hitherto they have been hampered by a variety of adverse factors, of which financial stringency, political difficulties, and lack of experience have been the most important. On the whole, even if the policy of reviving local self-governing institutions has not yet fully justified itself in practice, there would appear to be no reason for taking a pessimistic view with regard to its future.

In 1929-30,—the latest year for which detailed figures are available,—there were 777 Municipalities in British India, with about 19,000,000 people resident within their limits, and an aggregate income of Rs. 17·88 crores; but since Calcutta, Bombay and Madras alone contain some 3,000,000 people, it is obvious that the majority of the Municipalities are small. Most members of the municipal bodies are elected, and the proportion of elected members tends on the whole to increase. The interest displayed in the elections is often keen. In the big cities there have now for years past been Improvement and Development Trusts in existence, and loans are floated for such objects as the abolition of slums, the provision of open spaces, the construction of model tenements, the realignment of streets and the segregation of offensive trades. But as only about 10 per cent. of the population of British India lives in towns, the vast majority of the people do not come within the scope of urban municipal administration at all, and are aware only of the activities of the District Boards, or rural Municipalities. District Boards, however,—generally with two or more Sub-District Boards subordinate to them are now to be found in most parts of the country, and are doing good work, particularly in connection with

education, medical relief, sanitation, and so forth. In 1929-30, the number of District Boards and Sub-District Boards in existence,—together with Union Committees and Union Boards,—was 5,744, and of their 59,900 or so members about 68·7 per cent. were elected. The receipts of these institutions (excluding Union Committees and Union Boards in Bengal and Bihar and Orissa) amounted in the aggregate to about Rs. 16·36 crores.

Some of the more important legislative measures of 1930-31 in connection with local self-government may now be described. In Assam, an official Bill to amend the Assam Municipalities Act, 1923, was introduced into the Legislative Council. The main objects of the Bill, as amended by the Select Committee, are to provide that the power of removing members, whether elected or appointed, should rest with the Government, and to make a member so removed ineligible without the consent of the removing authority; to provide that the approval of the Government should be conclusive proof of the regularity of the election of a Chairman; to provide for the election or appointment of a Chairman or Vice-chairman in the event of there being a vacancy by the resignation or removal of the previous incumbent, and to provide for the imposition of mooring fees on steamers and so forth.

In Bengal, the Legislative Council passed an official Bill to amend the Calcutta Municipal Act, 1923, with the object of ensuring the purity of tinned milk and prohibiting the use of preservatives other than salt in butter. The sanction of the Governor-General was obtained for the introduction in the Council of the Bengal Fairs Bill, the object of which is to impose upon local bodies in the Presidency the duty of providing for adequate water supply and medical relief at notified fairs and to provide them with funds for the purpose. Three non-official Bills were introduced during the year to amend the Calcutta Municipal Act, 1923. The object of the first is to empower the Calcutta Municipal Corporation to check the adulteration of edible oils; the second is designed to give Muslims the right of electing their representatives on the Corporation by separate electorates permanently operative, and to provide for the representation of the Anglo-Indian community by election instead of nomination; and the third is intended to remove the grievances of the people of Kalighat in the matter of representation by separating the Kalighat area from the Bhowanipur area and constituting it into a separate ward. The first Bill was referred to a

Select Committee and the second and third were circulated for eliciting opinion. A non-official Bill to amend the Bengal Village Self-Government Act, 1919, was introduced and referred to a Select Committee. The main objects of this measure are to provide for the removal of a member who has been convicted of any non-bailable offence involving moral turpitude; to authorise Union Boards to maintain either allopathic, homeopathic, Ayurvedic or Unani dispensaries; and provide for the prevention and scientific treatment of cattle diseases. The sanction of the Governor-General was also obtained for the introduction of a non-official Bill to amend the Bengal Municipal Act, 1884. Its main objects are to provide for the removal of Municipal Commissioners for non-payment of taxes due from them; to empower the Local Government to appoint a new body of Commissioners in the event of the elected Commissioners being disqualified by a Law Court; and to empower Municipalities to levy a tax upon motor vehicles.

In Bihar and Orissa, the Legislative Council passed an official Bill to amend the Bihar and Orissa Municipal Act, 1922. Its main objects are to enable municipal funds to be used for the establishment and maintenance of a drainage system and to make adequate provision for the imposition of a drainage tax. The sanction of the Governor-General was obtained for the introduction of a Bill to amend the same Act in such a way as to enable the local Government, not only in circumstances which would justify suppression, but also on the application of the Commissioners, to take over the duties of a Municipal Committee regarding the assessment, collection and remission of taxes, and to empower the Government to apply the certificate procedure in lieu of the ordinary procedure for realising arrears of municipal taxes. A Bill to amend the Bihar and Orissa Places of Pilgrimage Act, 1920, was passed during the year, with the object of enabling a Lodging House Committee to place its funds in a bank or to invest money in Government securities or other securities approved by Government.

In Bombay, the official Bills to amend the Bombay District Municipal Act, 1901, the Local Boards Act, 1923, and the City Municipalities Act, 1925, and the Bombay Local Fund Audit Bill, —which were referred to in our previous Report,—were duly passed, together with one other official Bill to amend the Bombay District Municipal Act, 1901, and two other official Bills to amend the Bombay Municipalities Act, 1925. The object of these last

two Bills is to enable Government to make an order on the recommendation of the Municipality, vetoing the continuance in office of any person holding the appointment of a chief officer, a health officer or an engineer. The main objects of the Bill to amend the Bombay District Municipal Act, 1901, were to regulate the procedure for electing a new President on the constitution of a new Municipality, and to declare a municipal servant to be a public servant for the purposes of the Indian Penal Code. In addition, three official Bills to amend the City of Bombay Municipal Act, 1888, were passed during the year. The main object of the first of them was to empower the Corporation to levy a town duty on substitutes for *ghee*. The second Bill empowered Government to create courts of Presidency Magistrates for speedily disposing of municipal cases, and the third provided for appointing a Schools' Committee by the Corporation. Another official Bill to amend the Bombay District Municipal Act, 1901, was passed and became law. A non-official Bill with the object of regularizing interpellations at the meetings of the Bombay Municipal Corporation was passed by the Legislative Council and subsequently received the assent of the Governor-General.

In Burma, the Legislative Council passed an official Bill to amend the Burma Municipal Act, 1898. Its main object is to empower the Government to require Municipal Committees to appoint Health Officers, and Inspectors of Public Health.

In the Central Provinces, a non-official Bill to amend the Central Provinces Municipalities Act, 1922, was introduced in the Legislative Council. Its provisions relate to the transfer of municipal property; the construction, maintenance and renting of houses to indigent persons; and the supervision of municipal aided private schools. The sanction of the Governor-General was obtained for introducing a non-official Bill to amend the Central Provinces Village Panchayat Act, 1920, with the object of giving enhanced powers and status to the *panchayats* in respect of administrative and judicial functions.

In Madras, the two official Bills to amend the Madras District Municipalities and Local Boards Acts, 1920,—which were mentioned in last Report,—were duly passed by the Legislative Council during the year, as also was the Madras Motor Vehicles Taxation Bill, a measure designed to substitute for all existing motor tolls and taxes a provincial tax on motor vehicles within the Madras

Presidency, and to compensate local bodies for the loss of revenue caused by the abolition of the existing taxes.

In the North-West Frontier Province, as a result of the Government of India agreeing to the extension of the system of election to local bodies, the reconstitution of the Boards is now proceeding.

In the Punjab, an official Bill, entitled the Punjab Municipal Executive Officers Bill, was introduced in the Legislative Council. The Bill is designed to provide for the appointment of whole-time salaried executive officers with full executive powers but leaves the power of imposing taxation, of making bye-laws, and of dictating policy in general to the Municipal Committees as before.

In the United Provinces, the Legislative Council passed a Bill to amend the United Provinces District Boards Act, 1922. The object of this measure is to empower District Boards to levy tolls, with the sanction of the Government, on newly constructed or rebuilt bridges with a view to repaying the loans obtained for the purpose.

The latest period for which detailed information is available concerning the actual working of local bodies in the Provinces is that for the year 1929-30. In Assam, considerable progress continued to be made by the Municipalities and Local Boards, especially in such matter as water-supply, road building, and sanitation. The expenditure on education increased. The year ended with balances amounting to Rs. 2,49,755 standing to the credit of the Boards. The finances of such as were in debt were reported generally to be not unsatisfactory, though the credit of the Sylhet board remained low and that of the Gauhati board was precarious. The total receipts of the Local Boards in the Province fell from Rs. 37,31,257 to Rs. 36,44,987, and the total expenditure from Rs. 38,39,769 to Rs. 37,98,714. The village courts and *panchayats* continued to be popular and did useful work.

In Bengal, the state of affairs showed little change. The financial position of the Municipalities, owing to the accumulation of arrears, continued to be unsatisfactory. Outstanding arrears increased by Rs. 2 lakhs to Rs. 18·76 lakhs. Howrah Municipality allowed arrears to mount up to Rs. 6,60,000; and Dacca, Hooghly, and Mymensingh had arrears amounting respectively to Rs. 2,46,000, Rs. 75,000, and Rs. 75,000. Howrah, however, undertook a vigorous economy campaign, and Dacca, although hampered both by civil litigation and communal strife, also made a praiseworthy

effort to maintain financial stability. The total receipts including opening balances rose from Rs. 129·6 to Rs. 132·4 lakhs, and the total expenditure from Rs. 114·6 to Rs. 117·6 lakhs; balances remained stationary at Rs. 15 lakhs. The lack of that civic sense which renders the burden of higher taxation, when necessary, readily acceptable, and the fear among the Municipal Commissioners of becoming unpopular by imposing on townspeople standards above the common ideal, are perhaps the most conspicuous defects in the working of the machinery of local self-government at present. On the other hand, it is generally recognised that the elective principle has now become deep-seated in the popular consciousness. During the year under review there were 82 Local Boards in the Presidency, with a total of 1,358 members. The number of primary schools maintained and aided by District Boards increased from 47,900 to 49,090. The Ministry of Local Self-Government was faced with a new problem during the year owing to the Chairman and a majority of two District Boards attacking the policy and authority of Government. The situation was dealt with in both cases by appointing a District Magistrate as Chairman who succeeded in preserving the existence of a representative local body. Apart from these abnormal cases the District Boards appear on the whole to have functioned satisfactorily and assisted in the promotion of rural well-being.

Municipal administration in Bihar and Orissa was marred during the year by the laxity of several Municipalities in collecting taxes, despite the fact that there was generally an increase in municipal income. The root cause of the trouble is probably the poverty of the towns in this Province. A feature of the year was the municipal elections, which were held either during or shortly after the period under review for all Municipalities except two. The number of Municipalities remained the same as the previous year, namely, 61, and there were 54 elected chairmen. The aggregate income of all Municipalities excluding opening balances rose during the year from Rs. 36·97 to Rs. 43·63 lakhs. Arrears in tax collections increased from Rs. 5·58 to Rs. 6·93 lakhs, and outstanding balances from Rs. 6·66 to Rs. 8·86 lakhs. More than half the Municipalities in the Province including those of 13 of the largest towns ended their financial year with arrears amounting to more than 20 per cent. of the current demand. Two Municipalities, namely those of Bihar and Jhalda, closed the year with uncollected arrears amounting

respectively to 66 and 93 per cent. Inspection and audit reports have also shown widespread laxity in other directions. Under the Local Self-Government Act, the Government of Bihar and Orissa is empowered to constitute Union Committees for dealing with certain matters such as roads and education in small areas, but these bodies have been gradually disappearing since the enactment of the Bihar and Orissa Administration Act of 1922; during the period covered by our previous report there were only 30 Union Committees in existence, and during 1929-30, 4 of them were converted into Union Boards. The total number of Union Boards working during the year was 52.

In the Bombay Presidency, including Sind, the number of Municipalities remained the same as in the previous year, namely 154. Elections were held in several Municipalities. The two Municipalities in the Poona District which were superseded in 1928 continued to be managed by Committees of Management. The aggregate income of all the Municipalities decreased by nearly Rs. 8½ lakhs to Rs. 232½ lakhs. Expenditure amounted to Rs. 235 lakhs as against Rs. 261 lakhs. The various Municipalities now have debts amounting to Rs. 191 lakhs, the Ahmedabad Municipality alone being responsible for Rs. 62 lakhs. Although the standard of municipal administration in the Presidency can still only be described as fair, and did not improve during the year, it is recognised that individual presidents and councillors have done valuable work, particularly with regard to the provision of an adequate water-supply, better roads, lighting, and drainage. There was no change in the number of District and *taluka* Boards, nor in their constitution, during the year. The administration of the superseded District Board at Sholapur continued to be in the hands of the Collector. Nine *taluka* Boards failed to hold the prescribed number of meetings. The aggregate income of the Boards during the year, excluding opening balances and debt, increased from Rs. 1,96,59,304 to Rs. 2,02,67,536, and the expenditure chargeable to current income increased from Rs. 1,93,40,189 to Rs. 1,98,91,284. Closing balances amounted to Rs. 45,96,577 as against Rs. 44,40,776. There was a satisfactory extension of primary education in certain areas. In Hyderabad District alone as many as 40 schools were opened, and the Colaba and Ratnagiri District Boards opened 25 and 17 new schools respectively. Two new primary schools were opened for girls in the Sukkur District. The working

of the District Boards appears to have been more satisfactory than that of *taluka* Boards. All of course might have achieved more with greater resources, but in existing financial circumstances Government cannot increase the grants-in-aid, and the Boards themselves are reluctant to impose additional taxation. There are no *panchayats* in Sind or in the Bombay Suburban Division. In the other Divisions the *panchayats*, with the exception of a few in the Broach and Thana Districts, have not come up to expectations and Government is now considering the revision of the Act.

In Burma the number of Municipalities outside Rangoon remained at 57 with a total membership of 817. Of these members 647 were elected, 98 were co-opted, 41 nominated and 4 *ex-officio*. Only 79 of the total members were Government officials. Of the 1,469 meetings held during the year 92 were abortive for want of a quorum. The Mandalay Municipal Committee was superseded during the year. Apart from opening balances amounting to Rs. 24·56 lakhs and debt accounts amounting to Rs. 4·97 lakhs the total income of the Municipalities other than Rangoon was Rs. 75·11 lakhs, against Rs. 76·88 lakhs in the previous year. Expenditure declined from Rs. 87·52 to Rs. 75·78 lakhs. The receipts of the Rangoon Corporation amounted to Rs. 1,01·23 lakhs and the expenditure to Rs. 100·59 lakhs leaving a margin of Rs. 63,873 as against Rs. 3·63 in the previous year. As regards the District Councils, their number during the year was 28 and their membership 631, consisting of 563 elected members, 17 members nominated by Commissioners of Divisions, and 51 Government officers co-opted for purposes of professional advice. There were 275 Circle Boards with a membership of 2,983, the number of village groups electing members to Circle Boards being 2,722. The first business transacted by the Circle Boards after the general elections was to return members to District Councils. Circle Boards have no independent functions or funds assigned to them and they continued to act only as advisory agents of District Councils in respect of public works and markets. The total receipts of the 28 District Councils, excluding opening balances and debt transactions, decreased from Rs. 88·84 to Rs. 86·69 lakhs and the total payments from Rs. 94·85 to Rs. 95·80 lakhs. Only four District Councils were able to meet their financial obligations from their own reserves without Government assistance. A substantially larger sum was spent during the year on vernacular education and public works; and 293 new schools were

opened in backward tracts with the aid of contributions from Provincial revenues.

In the Central Provinces, the number of Municipal Committees increased from 66 to 68. General elections were held in three Municipalities, and were keenly contested, the proportion of the electorate voting at Amraoti being 84 per cent. All the municipal committees except 4 held the prescribed number of meetings, the total of which increased from 1,622 to 1,791. The number of meetings which proved abortive for want of a quorum rose from 188 to 256. The total income of the committees,—excluding opening balances, and extraordinary and debt heads,—which has been rising steadily in recent years, increased from Rs. 70,01,000 to Rs. 74,93,000. The income from taxation rose by a little over Rs. 5·5 lakhs, but the actual collection of taxes, which had been unsatisfactory during the previous year, unfortunately showed no improvement. The number of financial irregularities disclosed fell from 3,178 to 2,329. All committees except 12 closed the year with a balance in excess of the prescribed minimum. But in some Municipalities the minimum balance was only secured by suspending works in hand. It was also recorded that the efficiency of several Municipalities was interfered with by manifestations of partisan or communal feeling. Except in four places there was no change in the constitution of the District Councils or Local Boards. The Gonda Local Board was dissolved as a result of the dispute between the Board and the District Council, Bhandara. All District Councils and Local Boards except 10 held the prescribed number of meetings, the total amounting to 815 as against 797 in the previous year. Of these 90 proved abortive for want of a quorum. The year opened with an aggregate balance of Rs. 29,92,022, and the total receipts from all sources amounted to Rs. 90,28,410. The expenditure was Rs. 94,04,214. The total number of recorded financial irregularities and embezzlements fell from 3,543 to 2,692. The relations between Local Boards and their District Councils have not always been as happy as they should be. During the year 159 new village *panchayats* were established.

In the Madras Presidency the total number of Municipal Councils remained 81. Elections were held in all the Municipalities except Annakapalle where the Council had been superseded for two years. There were elected chairmen presiding over 77 municipal councils; two had nominated non-officials as chairmen. The

aggregate opening balances were Rs. 43·5 lakhs as against Rs. 40·6 lakhs in the previous year, and receipts,—both ordinary and capital,—amounted to Rs. 206·4 lakhs as against Rs. 201·7 lakhs. The total expenditure was Rs. 208 as against Rs. 198·8 lakhs. The administration of 15 of the Municipalities was reported to be unsatisfactory. As regards the District Boards, their total number was 25 of which 22 possessed elected presidents. The total number of *taluka* Boards was 130, all but one of which were presided over by non-officials. The number of Union Boards was 457 and their aggregate membership 5,132. Two Union Boards, one in North Arcot District and the other in Salem District, did not function during the year, and three, in Ganjam, Nellore, and Bellary Districts, were abolished. The Kistna District Board, which was dissolved and placed under official control in 1928-29, was reconstituted during the year.

In the North-West Frontier Province there was no change in the number and constitution of Municipalities and notified areas, except in Peshawar Municipality where the elective system was introduced, half the non-official seats being thrown open to election. The number of meetings held was 199 as against 201 in the previous year. The attendance of non-official members of municipal committees improved in all places except in Kohat. The total income of the Municipalities was Rs. 14,26,681 as against Rs. 13,27,123 and the total expenditure Rs. 13,75,516 as against Rs. 15,18,248. No change was made during the year in the constitution, method of administration or jurisdiction of the District Boards. The total number of meetings held was 23 as against 29, and no meeting was adjourned for want of a quorum. The income and expenditure for the year amounted to Rs. 14,76,243 and Rs. 13,54,780 respectively, as compared with Rs. 14,17,927 and Rs. 13,82,513 in the previous year. The audit of the District fund accounts revealed no serious irregularity.

In the Punjab, the number of Municipalities remained 107. General elections were held in 20 Municipalities in which 90 seats were contested and many were keenly fought. On the other hand it is stated that municipal administration continues to be hampered by factions, communal dissensions and favouritism, and to this is ascribed the woeful condition of many Municipalities as regards finance and sanitation. In the Lahore Division it is noteworthy that the total of 6 committees whose working was said to be harmo-

nious and efficient the personnel of 3 was wholly nominated. In the Rawalpindi Division the committees functioned somewhat better; Ferozepur, Jagraon, Lyallpur, Montgomery, and Muzaffargarh Committees carried on satisfactorily, and the work of the Ludhiana Committee manifested distinct signs of improvement. But the report indicates that there is little good to be said of most of others, where personal and party motives, or inertia, are generally conspicuous. The total income of the Punjab Municipalities amounted during the year to Rs. 179·10 lakhs, as against Rs. 171·83 lakhs in the previous year, and the total expenditure was Rs. 140·71 lakhs as against Rs. 134·66 lakhs. The total closing balances increased from Rs. 27·41 lakhs to Rs. 31·11 lakhs, but in 19 committees the balance fell to less than the required minimum. The financial prospects were reported to be gloomy at the end of the year; many committees were practically bankrupt, and only likely to recover solvency, if at all, by starving citizens of all amenities. As against this, however, the position of the 29 District Boards was on the whole satisfactory. No less than 26 of the Chairmen were officials. General elections were held for 6 of the Boards, and for the contested seats the voting was keen. At Hoshiarpur over 70 per cent. of the electorate polled, at Sheikhupura 67 per cent., and at Sargodha 60 per cent. Most Boards held a sufficient number of meetings and on the whole the attendance at meetings was satisfactory, only one being adjourned for want of a quorum. The total income of the Boards, excluding opening balances, was Rs. 215 lakhs as against Rs. 212 lakhs, and the total expenditure Rs. 216 lakhs as against Rs. 214 lakhs. The future financial position of the Boards however appears dubious, since most have reached the limits of expansion of income and are faced with growing commitments. The main increase is on education, and as a result the expenditure on district works, especially communications, has had to be curtailed. The general financial situation renders it impossible for Government to increase its grants and if the Boards can find no other sources of income all programmes of development will have to be suspended.

The Municipalities in the United Provinces, in contrast to the Punjab, appear to function more efficiently than the District Boards. The total number of meetings held decreased from 1,973 to 1,961, and 219 as against 239 meetings had to be adjourned. The percentage of meetings which proved abortive for want of quorum was about 6, Jhansi alone providing 23 of such meetings in addition to

22 which were adjourned. The total income of all Municipalities was Rs. 162·37 lakhs, as against Rs. 161·01 lakhs in the preceding year. The percentage of collections to demand rose from 82·24 to 82·79. Ten Municipalities collected more than 95 per cent. of their demands, but 16 collected less than 70 per cent. Bareilly, Lucknow and Cawnpore are conspicuous among the larger Municipalities for improved collections. Arrears in Agra, however, increased from 1·75 to 2·08 lakhs, and Allahabad and Benares also had heavy arrears amounting to Rs. 1,00,000 and Rs. 1,81,000 respectively. The total expenditure of Municipalities declined from Rs. 177·16 to Rs. 175·38 lakhs. There was no marked improvement in the accounts, though the finances of 53 Municipalities were described as " satisfactory on the whole ", a distinction attained by only 49 in 1928-29. Benares, Lucknow and Meerut figured prominently in the list of 22 Municipalities whose accounts were found in an unsatisfactory condition, and the position of the Municipalities as a whole is undoubtedly disturbing, since the aggregate expenditure exceeded income by over Rs. 13 lakhs and the deficit was made up by depleting reserves, reducing closing balances, and taking more loans. The majority of Municipalities continue to show reluctance in imposing fresh taxation, owing to the fear of members of incurring unpopularity. As regards the District Boards, the total number of meetings fell from 1,004 to 950. The average percentage of attendance was 59. Departmental committees are reported to have rendered real assistance to the Boards, but *tahsil* committees evinced little interest although they continued to assist nominally in most Districts. The total income of the Boards during the year was Rs. 197·14 lakhs as compared with Rs. 191·85 lakhs and the expenditure Rs. 199·71 lakhs as against Rs. 208·59 lakhs. Expenditure thus again exceeded income. The chief reductions in expenditure were Rs. 7·92 lakhs under public works, and Rs. 1·24 lakhs under public health and vaccination. On the other hand expenditure on education rose by Rs. 1,13,000. The closing balance at the disposal of the Boards dwindled from Rs. 3·51 to Rs. 1·68 lakhs, and no less than 23 Boards had a deficit balance. Some are already bankrupt, while others are rapidly approaching this condition. It is reported that their work continues to be greatly hampered by communalism and party faction.

Of the various means whereby the circumstances of the poorer classes of the population, particularly in rural India, are being

improved, one of the most important and successful has been the development of Co-operative Societies, whose progress during the last two decades has been remarkable. The Co-operative Movement in India originated about twenty-four years ago, and in 1908-09, when it was still in its infancy, the total number of societies in the whole country was under 1,500; by 1929-30, however, it had increased to 104,187*; and the working capital of these bodies amounted in the aggregate to about Rs. 90 crores. The total number of members of primary societies was 4,181,904†, which works out at about 15 members per every 1,000 of the population. The number of members and of societies, and the amount of working capital, has increased without a check for the last 23 years, as is clearly shown in " the graph opposite." The primary object of the Co-operative Movement is to encourage thrift by collecting small shares, receiving deposits, and persuading members to make compulsory contributions for special purposes; and among the various types of society included under it are central and provincial banks and banking unions, supervising and guaranteeing unions, re-insurance societies, and agricultural and non-agricultural societies. The development of the agricultural non-credit societies, in particular, has been very rapid during recent years, and the range of their functions is wide, including as it does arrangements for the general sale of agricultural produce, the production and sale of implements and manures, the furtherance of irrigation projects, the consolidation of holdings, the opening of dispensaries and schools, the maintenance and construction of roads, and the rendering of assistance to the Agricultural Departments in spreading knowledge of improved methods of cultivation.

Conditions in Assam were abnormal during the year under review. Successive crop failures, declining prices, and devastating floods, all combined to impoverish the cultivator, and this resulted in some set-back to the progress of the Co-operative Movement. Nevertheless development was by no means inconsiderable. Altogether 99 new societies,—90 agricultural and 9 non-agricultural,—were registered during the year, and 29 societies were dissolved. The total number thus increased by 70 to 1,390. Membership increased from 66,955 to 67,813, and working capital from Rs. 64,62,671 to Rs. 72,03,548. As a result of the floods, there was a marked increase in the sale of seeds and agricultural imple-

* 88,693 for British India and 15,494 for the Indian States.

† 3,583,706 for British India and 598,198 for the Indian States.

ments through the Department, the value of seeds sold amounting to no less than Rs. 21,381, as against Rs. 3,302 in the previous year. The number of agricultural credit societies increased from 1,234 to 1,295. Recoveries were not as good as in the previous year, and outstandings amounted to Rs. 24,18,730, of which more than 50 per cent. was overdue, as against 42·7 per cent. in the preceding year. Non-agricultural credit societies increased from 47 to 63. Collections increased by nearly Rs. 90,000 to Rs. 5,45,211, but the percentage of overdues rose from 18 to 24. The total number of non-credit societies of all kinds was 24, with a membership of 2,591. The various co-operative stores were nearly all in a state of stagnation; the Jute Sale Society of Nowgong was dissolved, and the co-operative dairy of Habibganj and other milk societies made little or no progress. The position of the Provincial Co-operative Bank, also, was not satisfactory; deposits declined, and there was a falling-off in recoveries. A net profit of Rs. 10,624 was, however, secured. The combined reserve funds of the Provincial Bank and the 15 central banks increased from Rs. 78,000 to a little over Rs. 1 lakh. The total working capital of the 15 central banks increased from 16·39 to 18·96 lakhs, but the management of some of them was reported to be unsatisfactory. During the year the Surma Valley Co-operative Organization Society continued to do good work,—82 lectures being delivered on co-operation and 75 on sanitation. The corresponding Upper Assam Society however appears to have achieved little or nothing. One of the outstanding events with regard to the Co-operative Movement in Assam, as in other Provinces, was the enquiry conducted during the year into existing banking conditions by the Provincial Banking Enquiry Committee.

In Bengal, despite unfavourable weather conditions, fair progress in co-operative activities during the year was maintained. The total number of societies increased from 19,877 to 22,532, their membership from 7,06,572 to 7,50,137, and their working capital from Rs. 12·88 to Rs. 14·83 crores. The expansion occurred as usual chiefly in the agricultural credit societies, whose number rose from 16,930 to 19,198, and membership from 4,08,980 to 4,57,621. The societies continued to depend chiefly on central banks for their working capital, the proportion derived from this source being 67 per cent. Owing mainly to the collapse in commodity prices, collections declined from 36·7 to 29·2 per cent. of

the outstandings and consequently overdues, which had been rising steadily since 1926, increased further. A larger proportion of the societies than formerly were reported to be in a precarious financial state. The number of agricultural purchase-and-sale societies increased from 100 to 108; among them are several important societies for the marketing of jute, but they appear to have been handicapped lately by faulty organization and inefficient management. The number of irrigation societies rose from 773 to 887, and of milk societies from 169 to 242. As regards non-agricultural credit societies, their number increased from 410 to 456 and their membership from 1,43,895 to 1,47,575. These societies have generally thriven well and have been of assistance to people of limited means in urban areas in providing them with easy credit facilities. The number of stores and supply societies declined from 69 to 56, and their total sales from Rs. 5·36 lakhs to Rs. 3·89 lakhs, with a corresponding fall in profits. There are in the Province numerous functional societies such as artisans' societies, fishermen's societies, weavers' societies, silk societies, zamindari societies, anti-malarial and public health societies, relief societies, and house building societies, some of which do useful work. The same is true of a number of societies classified under the heading higher co-operative organizations, such as the Central Co-operative Malaria Society, the Bengal Co-operative Paddy Sale Society, the Bengal Provincial Co-operative Industries Society, the Bengal Co-operative Silk Union, various producers' unions, of which the most important is the Calcutta Milk Union, and some industrial unions. The number of central banks increased by 4 to 116, and the number of societies affiliated to them from 17,019 to 19,071. Reserve and other funds rose from Rs. 22·74 to Rs. 26·51 lakhs, and repayment of loans amounted to 55·5 per cent. as against 52·1 per cent. in the preceding year. The total number of societies under liquidation fell during the year from 182 to 141. An important development which requires mention was the decision of the Government to increase the strength of the audit staff, which had of late proved inadequate, and 63 additional auditors were appointed during the year, and more shortly after its close, the total strength of the staff thus being brought up to 223.

The working of the Co-operative Department in Bihar and Orissa during 1929-30 revealed a somewhat precarious state of affairs, and a policy of caution was therefore adopted in register-

ing new societies and several inefficient ones were liquidated. Only 286 new societies were started during the year and the registration of 261 was cancelled. Including central banks and unions, the total number of societies at the end of the year was 9,404, with a working capital of Rs. 588·89 lakhs, and a membership of 2,66,536, which represented an average membership of 26 per society. The total number of agricultural societies increased by 102 to 8,817,—8,732 of them being primary credit societies. Although membership and working capital declined, reserve funds, profits, and deposits increased. Among the agricultural non-credit-societies the only successful ones were the grain *golas*, or depôts, but their number declined by 4 to 72. There was also some deterioration in non-agricultural societies. Guarantee unions declined in number from 195 to 185. The number of central banks remained stationary at 67, and most of them continued to take an active part in assisting in agricultural activities, land improvement, sanitation, medical relief, and cottage industries; but their financial position was generally speaking unsatisfactory. Owing to poor collections, there has been a steady accumulation of overdues in the past, and the outstanding loans during the year amounted to no less than Rs. 2·08 crores. The percentage of collections to outstandings fell from 58·9 to 35·3; but new loans, fortunately, declined from Rs. 49·38 to Rs. 36·25 lakhs. The financial prospects of the societies other than banks also appeared somewhat precarious, no less than 68·5 per cent. of them being classed as average, and 11·1 per cent. as bad or hopeless. In addition to the numerous societies actually dissolved, there were 491 cases of liquidation pending at the close of the year, involving no less than Rs. 14¼ lakhs on account of principal alone. It was however hoped that the position would improve as a result of the appointment by the Government in 1931 of a committee empowered to review the whole problem of the Co-operative Movement in the Province, and it appeared likely that the duties of supervising societies and of controlling the field staff will soon be centralized in the Bihar and Orissa Co-operative Federation. This fulfils a number of useful functions, which were well maintained during the year. It employed a staff of 10 permanent assistant auditors and 106 local auditors. It also appointed five assistant propaganda officers in addition to the five propaganda officers previously enrolled, to instruct members of societies in co-operative methods and prin-

ciples. As many as 83 training classes were held at various centres by these officers.

In the Bombay Presidency fairly satisfactory development in the Co-operative Movement was reported, though the results were not as good as in the previous year, owing to the fall in prices and the disastrous floods in Sind. Expansion was also checked by the Department's determination to consolidate the position by eliminating inefficient societies and securing a better standard of management. The total number of societies of all kinds rose by 262 to 5,734, and their membership by 26,982 to 5,75,616. The working capital increased by Rs. 89½ lakhs to Rs. 12,81·39 lakhs, and the total owned capital by nearly Rs. 73 lakhs to Rs. 795 lakhs. Reserve funds amounted to Rs. 93·80 lakhs. Agricultural credit societies showed an all round improvement, their number increasing by 209 to 4,526 and their membership by 2,576 to 2,65,325. Unauthorised arrears, however, rose from 30 per cent. to 31 per cent., and amounted to Rs. 98·99 lakhs. The unfortunate financial position of the agriculturist was the chief cause for this, but in certain areas political factors were also responsible, particularly in Gujerat. Of the total number of these societies, however, 1,631 had no arrears and 575 had arrears of less than 10 per cent. Agricultural non-credit societies increased by 2 to 253, and on the whole functioned satisfactorily. The most successful were the cotton sale societies. The five purchase and sale unions continued to do useful work, and the Co-operative dairies also showed improvement. The number of non-agricultural societies increased from 776 to 831, and their membership from 1,98,117 to 2,19,016. The majority of them were credit societies. Urban banking in the Presidency progressed well, the number of urban banks with over Rs. 50,000 as working capital increasing from 70 to 76. There is now an urban bank in almost all the *taluka* towns and many of the larger villages. Consumers' societies however made little progress, and the number of producers' societies fell from 27 to 21. The outlook of weavers' societies, too, was not hopeful, but housing societies increased from 56 to 67. The position of the Provincial Co-operative Bank continued to be satisfactory. The total working capital declined from Rs. 184·56 to Rs. 156·69 lakhs, owing mainly to repayment of the long-term loan taken under the Co-operative Societies Land Improvement loan rules, but overdues were reduced from Rs. 30·34 to Rs. 23·28

lakhs. The number of central banks was 19,—the same as in the previous year. Their membership and working capital increased from 12,105 and Rs. 265·58 lakhs, respectively, to 12,976 and Rs. 284·61 lakhs, and reserve funds from Rs. 4·41 to Rs. 5·38 lakhs. Although profits declined from Rs. 3·89 to Rs. 3·55 lakhs, the percentage of arrears was reduced from 19·7 to 14·5. The Bombay Provincial Co-operative Institute continued to perform useful work, and its membership at the close of the year stood at 5,755. As regards Sind, the total number of agricultural societies increased from 877 to 912, and their membership from 27,461 to 28,232. The year however was a disastrous one climatically, and unauthorized arrears greatly increased, only Rs. 19·4 lakhs out of a total demand of Rs. 68·5 lakhs being realised. The societies, however, had good assets and their management was sound. Zemindari Banks in Sind have proved successful, and one more was registered during the year. The number of agricultural non-credit societies and of non-agricultural societies in Sind was 37 and 36 respectively.

The state of the Co-operative Movement in Burma, which was deplorable during the period covered by our previous Report, became still worse during the year under review. The Department was wholly occupied with the work of liquidation, and there could be no question of propaganda or extension. The total number of societies declined from 4,151 to 3,215, membership from 1,14,620 to 94,680, and working capital from Rs. 315·65 to Rs. 283·35 lakhs. The number of societies under liquidation increased from 1,382 to 2,155, involving a total sum of Rs. 72·73 lakhs in liabilities, and it was expected that, in addition to 500 unions and cattle insurance societies, some 600 or 700 more agricultural societies would go into liquidation within the next year or so. The number of primary credit societies was 2,191 as against 2,856, and was expected to decline to 1,400 within two years. It was estimated that of the Rs. 22 lakhs due from these societies to the Provincial Bank on account of interest alone, not more than Rs. 11 lakhs was likely to be recovered. Agricultural non-credit societies in some Circles were reported to have achieved some good work in the sale of improved paddy seed and implements, and in demonstration work. As regards the primary non-agricultural credit societies, the working of the town banks and other urban credit societies showed some improvement, but their number declined from 94 to 91 and

their profits from Rs. 97,828 to Rs. 79,927; and non-agricultural societies, other than town banks, showed little activity and are gradually disappearing. The number of agricultural unions declined from 548 to 433. The process of winding-up the Provincial Bank continued, and with the aid of grants totalling Rs. 29,30,000 voted by the Burma Legislative Council, the Bank was able to reduce its total liabilities amounting from Rs. 101·21 lakhs to Rs. 27·29 lakhs in 18 months and in addition paid in full its creditors' interest claims and its management expenses. The process will however take some years owing to the difficulty of securing recoveries from constituent societies. With the putting into liquidation of the Pakokku and Sagu-Salin district banks, the number of central banks declined to 12, and the operations of two of them were practically confined to the recovery of old debts. There were, however, some bright spots in the picture. Most of the societies in Prome District continued to function successfully; there was some fairly sound societies to be found elsewhere, particularly in Pegu, Henzada, Shwebo and Mandalay Districts; the central banks at Prome, Pegu and Moulmien had a successful year; and several town banks and salary earners' societies continued to do good work. Improvement was also effected in the constitution of the Burma Provincial Co-operative Council, which now functions regularly and smoothly and exercises a closer control over its audit staff.

In the Central Provinces the policy of eliminating lifeless societies, resuscitating those not beyond hope of redemption and starting new ones on sound and cautious lines was continued. One hundred and twenty-seven societies were placed under liquidation during the year while the affairs of 137 were finally wound up. There was a large increase in new societies in Chhatisgarh Division, no less than 344 being registered. The total number of societies of all kinds increased from 3,954 to 4,137, of which 4,020 were primary credit societies. The total membership was 1,28,000. Working capital increased from 506·86 lakhs to 537·49 lakhs, but there was a substantial increase in arrears, which rose from Rs. 73·99 lakhs to Rs. 92·55 lakhs. This appears to have been due to over-financing combined with falling prices. As a result however of a recommendation of the Royal Commission on Agriculture, arrangements have been made by the Government to vest responsibility for the supervision of societies in Central Boards, one for

each Institute area, which should employ the necessary field staff and control it through local education and supervision societies, constituted by each bank, and composed of members other than those of its Working Committee. It is believed that this system should in time bring about the required improvement. Unfortunately during the year under review, owing to the financial stringency, it could only be brought into force in the areas of the Berar and Chhatisgarh Institutes. The Central Provinces and Berar Co-operative Federation continued to function satisfactorily during the year. Agricultural credit societies increased in number from 3,787 to 3,950, and in membership from 57,320 to 59,308. The number of central banks remained stationary at 34, but their working capital rose from Rs. 226·36 lakhs to Rs. 240·56 lakhs, and reserve and other funds from Rs. 26·29 lakhs to Rs. 28·31 lakhs. Cash advances made by them to their constituent credit societies amounted during the year to Rs. 36·94 lakhs, but the percentage of recoveries to the total demand of Rs. 104·67 lakhs was only 34·6 per cent. The main reason for this was the concentration, especially in Berar, of a disproportionately large amount of the loan in the hands of a few influential borrowers. Nevertheless, deposits by individuals rose from Rs. 134 lakhs to Rs. 144 lakhs in spite of a reduction in interest rates. The Provincial Bank showed satisfactory progress during the year, and its working capital increased from Rs. 102·79 lakhs to Rs. 106·47 lakhs. Profits, however, declined from Rs. 46,557 to Rs. 39,370, owing mainly to depreciation in the value of Government Securities. The number of agricultural non-credit societies increased from 30 to 37, and their membership from 1,227 to 1,386. These societies are mainly production and sale societies, and through them the Department is able to sell improved varieties of seeds, implements, and artificial manures. The number of non-agricultural societies of all kinds increased to 95. The most successful of them appeared to be the Basin Weavers' Industrial Association.

Satisfactory progress in the Co-operative Movement was also reported from the Madras Presidency, where as in other Provinces a cautious policy was adopted with regard to fresh registrations. Thus out of 1,338 new applications, only 534 new societies were registered, the registration of 383 was cancelled, and 612 societies were in liquidation. The total number of societies of all classes rose from 15,086 to 15,238, with a total membership of 9,75,000

and a working capital of Rs. 933·99 lakhs, as against 908·69 lakhs in the previous year. Reserve funds increased from Rs. 84·28 lakhs to Rs. 110·95 lakhs. Recoveries showed a slight falling off, owing to the economic depression. As a result, the number of dormant societies and societies whose arrears exceed 40 per cent. increased, and amounted to 9,071. Agricultural societies of all types numbered to 13,106,—an increase of 159. Of these 170 were purchase and sale societies, 396 other special types, and the rest credit societies. The total membership rose from 6,90,681 to 7,13,615. The net profit of the credit societies however declined from Rs. 12·38 lakhs to Rs. 11·51 lakhs, and Rs. 176·23, or 47 per cent., of the total demand of Rs. 3,79·72 lakhs on account of principal alone was outstanding at the end of the year. Of the 405 supervising unions, only 11 succeeded in improving collections. The purchase and sale societies showed some improvement, and disposed of stock to the value of Rs. 3,56,670. Turning to non-agricultural societies, these as a whole showed better results, since they increased in number from 1,144 to 1,151, in membership from 2,09,682 to 2,21,475, and in working capital from Rs. 239·79 lakhs to Rs. 265·72 lakhs. There were 187 societies which worked at a loss, but the remainder between them earned a total divisible profit of Rs. 9,76,177. As many as 3,054 of these societies operated on behalf of the depressed and backward classes, and a further 98 for hill tribes. The number of central banks was 31, and they had 12,923 affiliated societies and a total working capital of Rs. 627·18 lakhs and a reserve fund of Rs. 22·46 lakhs, which represents an improvement on the previous year. Deposits moreover rose from Rs. 507·91 lakhs to Rs. 550·58 lakhs. The banks are concentrating more and more on developing their short-term business, and the percentage of such loans to the total increased from 59 to 69. Although there was a reduction in lending rates, overdues generally rose somewhat during the year, and 9 banks had overdues exceeding the average. Soon after the close of the year a new central bank was started at Madras to finance co-operative institutions in the city. The previously established Madras Central Urban Bank continued to show steady progress, working capital, deposits, and profits alike increasing. In addition to the 27 primary land mortgage banks in the Presidency a central mortgage bank was established during the year, and made a promising start. The primary banks have now all been affiliated to it, and will in-

future be financed by it. The Provincial Co-operative Union, which had a membership of 452 during the year, continued to do very useful propaganda and educational work. The Co-operative Federations however have not proved successful, and their number declined from 25 to 24. Of the 14,756 primary societies in the Presidency, as many as 12,006 were affiliated to the 405 local supervising unions. There were six registered co-operative training institutes which during the year trained 865 candidates for co-operative work.

Rapid progress in the Co-operative Movement continued to be reported from the North-West Frontier Province. The total number of societies rose from 101 to 166, their membership from 3,938 to 5,825, and their total working capital from Rs. 6·18 to Rs. 8·92 lakhs. As many as 152 were agricultural societies, with a total membership of 4,122, and a working capital of Rs. 3·40 lakhs. All of these were financed by the Hazara Central Bank, whose working capital increased during the year from Rs. 2·36 to Rs. 3·42 lakhs. The remaining 13 were non-agricultural societies,—mainly credit and thrift societies,—with a membership of 1,553 and a total working capital of Rs. 2·08 lakhs. Recoveries during the year were remarkably good, being 47 per cent. of the total amount on loan in the case of the central bank, 69 per cent. in the case of the agricultural societies, and 121 per cent. in the case of non-agricultural societies. Overdues were negligible in amount.

A very satisfactory state of affairs was also reported from the Punjab, where the Co-operative Movement has been conspicuously successful for several years past. Despite difficult conditions an all-round improvement was again recorded. A cautious policy was adopted with regard to new societies, but 1,212 were nevertheless registered, and the net increase was 871, which brought the total number of societies in the Province up to 20,333. This is six times larger than the total for 1916, and as many as 40 per cent. of the Punjab villages now possess at least one co-operative society. Membership increased during the year by over 38,000 to nearly 680,000; and as each new member may generally be said to represent a family, the number of persons affected by the Movement was about 2½ millions, or nearly 12 per cent. of the total population. As working capital amounted to Rs. 12 crores, of which Rs. 4,05 lakhs or 34 per cent. was owned capital, the financial position of

the Movement was thoroughly sound. The distress caused by the floods in the Indus, Jhelum and Chenab Valleys, by the locust invasions, and by the fall in prices, was greatly alleviated by the activities of the Department, as is shown by the sudden rise from about 2. to 13 per cent. in the proportion of loans taken for the payment of land revenue. Excellent work was also done in connection with the consolidation of holdings and the provision of wells and the cultivation of waste land. Over 50,000 acres were consolidated during the year, the total acreage affected since the work first began in 1920-21 being about 250,000. The Punjab Co-operative Union continued to serve as the central council for the Co-operative Movement, and employed a total staff of 538 for audit and supervision. The Provincial Co-operative Bank made excellent progress, its working capital increasing from Rs. 76 lakhs to Rs. 96·81 lakhs, and the profits for the year amounting to Rs. 67,000. Excluding the Central Industrial Bank, Amritsar, which confines its activities to financing industrial societies, the number of central banks was 47, and their management continued to show steady improvement. In addition there were 64 banking unions. The total working capital of these institutions increased from Rs. 6·64 lakhs to Rs. 7·05 lakhs, of which Rs. 72 lakhs or more than 10 per cent. (the required standard being 8½ per cent.) was owned capital. The number of mortgage banks in the Province continued to be 12. A new venture in the shape of a cattle trading bank, with limited liability, was started during the year at Ajab, and made a good start. As many as 16,125 or about 75 per cent. of the societies were agricultural credit societies, their number having increased by 657 and their membership by 28,000 during the year . Their total membership amounted to 4,83,000, their working capital to Rs. 8,01·68 lakhs and their reserve funds to Rs. 1,63·10 lakhs. Repayments declined from Rs. 215 to Rs. 204 lakhs, owing primarily to the climatic misfortunes already referred to and the general economic depression. Included among these societies were 188 "better farming" societies, which sold 688 maunds of improved wheat seed and 423 maunds of improved cotton seed. The grain banks rose in number from 49 to 56, and proved increasingly popular. Non-agricultural societies amounted to 2,952, with a total membership of 1,04,603; as many as 1,092 of them were credit societies, with a total membership of 50,366. Of the 320 production and sale societies, 197 represented the weaving

trade, which handled a considerable volume of goods during the year, though the sale proceeds were somewhat less. Among other societies under this class may be mentioned those for compulsory education and for the purchase and sale of goods. Of the latter the biggest is the New Egerton Woollen Mills, which has a turnover of nearly Rs. 3 lakhs. The total number of societies in liquidation at the end of the year was 579.

In the United Provinces some improvement was reported in the non-credit side of the Co-operative Movement, but there was a further deterioration in the position of the credit societies. The total number of societies, together with membership, declined and there was a substantial and disquieting increase in the percentage of overdues, which at the end of the year amounted to 47 per cent. of the total outstandings. Bad harvests and falling prices appear to have been primarily responsible for this state of affairs, but deficiency in supervision and inspection was also a factor. Nevertheless a good deal of useful work was done. Nearly 8,000 acres were sown by members of co-operative societies with Pusa wheat, 7,500 acres with Coimbatore sugarcane, and a further 1,200 acres with various other varieties of improved seed. The societies were also instrumental in extending the use of improved agricultural implements, in cleaning and repairing wells, and in providing better sanitation. As many as 450 societies maintained dispensaries, and there was some progress in the work of adult education and rural reconstruction. The total number of central credit societies decreased from 70 to 69, of which 60 were central banks and 9 banking unions. Reserve and other funds showed a small increase, but overdues advanced from 29 to 38 per cent. of the outstandings, and the general financial position of these institutions was not satisfactory. The number of primary agricultural societies again declined, from 5,390 to 5,044, with a proportionate fall in membership,—although 130 new societies were registered during the year. A further fall was considered inevitable, since some hundreds of societies were on the verge of liquidation. The loans advanced by the societies have been steadily mounting, and rose during the year from Rs. 31·64 lakhs to Rs. 37·79 lakhs. Although the bulk of the loans were taken for the purposes of cultivation and purchase of cattle, as much as 31·78 per cent. were required for the payment of rent, which shows how hard the cultivators have been hit by the general economic depression. The number

of these societies which distributed dividends decreased from 838 to 808; 304 worked at a loss; and 502 of them were almost bankrupt. Agricultural non-credit societies, of which there were 140, showed little activity, though a good deal of attention was devoted to the consolidation of holdings in two Districts. The number of non-agricultural credit societies, on the other hand, increased from 67 to 71, and their membership from 17,500 to 20,500. Some of them cater to the needs of mill-hands in Cawnpore. Cottage industries societies decreased from 176 to 156, and as their total overdues constituted 39 per cent. of the outstandings, they cannot be said to be flourishing. The same is generally true of purchase and sale societies and housing societies. The total number of societies under liquidation rose during the year from 826 to 1,237, and 502 societies, including 2 central banks, were dissolved. In addition to the Government inspection and audit staff, the United Provinces Co-operative Union employed 180 supervisors, but their work was reported to be below the standard required. The work of running the co-operative journals was taken over by the Union during the year, with the aid of a special Government grant.

From this brief review of the Co-operative Movement in India it will be apparent that, despite the weaknesses that have been revealed by the general economic depression, it has already made substantial progress throughout the country and proved of great assistance to the population, particularly in rural areas. Another important means whereby the condition of the masses is being improved is the development of accessory rural industries, which, in recent years, has been obtaining an increasing amount of attention from the Departments of Industries in the Provinces. As we have seen in Chapter III, agricultural activities throughout most of this country can only be undertaken during a portion of the year, owing to the nature of the Indian climate and the seasonal distribution of the rainfall, and consequently, in the absence of alternative occupations, a large proportion of the rural population usually spends several months in enforced idleness. In view of the immense economic loss which is thus inflicted on the country as a whole, and of the urgent need,—for their own sakes,—of improving the standard of living and the productivity of the masses, the desirability of devising some method of altering this state of affairs has long been realised. The problem, however, is an immense one, and although the efforts which are being made

by the Provincial Governments through their Industries Departments are undoubtedly proving of value, they naturally cannot be expected to yield widespread and immediate results,—particularly in times such as the present. These Departments, of course, are by no means exclusively concerned with this particular question, but as industrial matters in general have been treated at some length in Chapter III, we will confine ourselves here to describing briefly the developments that have recently occurred during in the encouragement of rural industries, and, *en passant*, the progress that was achieved in industrial and technical education.

Owing to lack of funds, no fresh extension of industrial activity took place in Assam during 1929-30, and the Department again confined its attention to hand-loom weaving, the encouragement of sericulture and the administration of technical and industrial education. The Gauhati Weaving Institute continued to do good work, though the value of the stores sold declined from Rs. 27,409 to Rs. 24,147. The four peripatetic weaving parties visited 588 villages. Sericulture at the Titabar station proceeded on the usual lines and the demonstrators appointed in the previous year began work in the villages. The existing plantations were extended. Silk worms produced in the Shillong Sericultural station have shown good promise. The possibilities of poultry-breeding have begun to attract the attention of the middle classes, and the poultry section in the Upper Shillong farm is being continued. The total loans issued by the Department for the encouragement of small industries amounted to Rs. 26,000. The technical schools at Jorhat and Sylhet continued to do good work; applications for enrolment were heavy, and there were 174 students on the rolls at the close of the year. The Fuller Industrial School at Shillong and the Fuller Technical School at Kohima also progressed satisfactorily and turned out a number of students capable of earning a livelihood by carpentry, masonry and smithy. There were altogether 15 technical and industrial schools in the Province, in which about 400 students were under training. The State scholar who had obtained training in mineral oil extraction in England on his return underwent further practical training in a Burma oil-field. Another State scholarship was awarded during the year for training in mechanical engineering in England. In addition to these,

five stipendiaries were under training in miscellaneous industries outside the Province.

In Bengal, progress during the year is reported to have been well maintained, despite the fall in prices and industrial disturbances. The number of technical and industrial institutions in the Presidency during the year was 120,—48 being under Government management, and the total enrolment was 6,284. A total of Rs. 12·03 lakhs was spent on technical and industrial education, of which Rs. 4·95 lakhs was provided out of provincial revenues. The total expenditure on the Industries Department was Rs. 7,98,567, out of a sanctioned grant of Rs. 8,81,999. Investigation continued to be made into the possibilities of manufacturing soap from oil-bearing seeds grown in the Province, and funds were provided under the 1930-31 budget for purchasing plant and installing it at the Industrial Research Laboratory for experimental purposes. The Department also provided facilities for training young men in manufacturing soap on cottage industry lines. The total number of weaving schools in the Presidency was 52, the most important of them being the Central Weaving Institute at Serampore. In order to bring the Institute into closer touch with the cotton and jute industries, a special committee was constituted. Regular instruction continued to be given by the 25 peripatetic weaving schools, and there were in addition six demonstration parties in continuous service. The Department sold through its various agencies improved implements worth Rs. 3,858, including 961 weaving sleys and spinning wheels. A special apparatus which is likely to prove of value in developing the village pottery industry was evolved by the Department during the year. Demonstrations in improved manufacturing methods, on the village industry scale, for the conch-shell industry, the umbrella handle industry and paddy husking industry were continued and proved increasingly popular. Attention was also devoted to the possibility of extending the bell-metal industry, as a result of successful experiments in casting, finishing and polishing bell-metal articles made at the Industrial Research Laboratory. Good progress was recorded at the Bengal Tanning Institute, and classes for instruction in boot and shoe-making and the manufacture of leather articles were also started at the premises of the Calcutta Technical Institute, as well as an experimental course in plumbing and sanitary fitting. The Kanchrapara technical school maintained its record of usefulness,

and technical schools were also established at Asansol and Hooghly. A substantial number of the candidates who competed for the City and Guilds of London Institute examinations in technological subjects succeeded in passing, and two State scholarships were awarded during the year, one for training in England in modern printing technique and the other in paint and varnish manufacture.

In Bihar and Orissa, the number of industrial and technical institutions increased from 26 to 28, though there was a decline in enrolment from 1,981 to 1,861. The Bihar College of Engineering had an enrolment of 300, its total expenditure amounting to Rs. 2,25,577. As many as 60 per cent. of the students passed the final degree examination, and all the 23 who appeared for the intermediate examination in civil engineering were successful. The Orissa School of Engineering,—which had a total enrolment of 113,—also progressed satisfactorily; the new workshops were completed during the year and a beginning with the installation of plant was made. The Technical Institutes at Tirhoot, Ranchi, and Jamshedpur, and the various mining classes continued to be popular. In the Jamalpur technical school, of the 161 apprentices who sat for the final examination, 133 were successful. The three State scholarships were continued, the subjects chosen for the year being electrical engineering, paper technology and woollen manufacture. In addition, Government provided a short-term scholarship of the value of Rs. 3,000. The number of Government institutions entirely devoted to teaching some form of handicraft during the year was 5, and a total sum of Rs. 1,05,403 was spent on educational institutions and demonstrations. The Cottage Industries Institute at Patna had another successful year, the total sale proceeds amounting to Rs. 1,77,120 as against Rs. 1,32,409 in the preceding year, while the net cost of maintenance was only Rs. 24,401. The *purdah* section alone, through its London agent, sold goods to the value of Rs. 90,000 and made a profit of Rs. 19,379, and the newly-started agency in New Zealand made a good beginning with sales worth Rs. 5,704. Considerable progress was made during the year in the technique of hand-printing of silk. The Government Silk Institute at Bhagalpur and the Wool-working Institute at Gaya continued to develop satisfactorily, and the Punjab, Mysore and Hyderabad Governments deputed officers to visit them and study their methods of organisation. The peripatetic weaving and dye-

ing demonstration parties extended the field of their activities substantially during the year, visiting 524 new villages and introducing an additional 3,116 fly shuttle sleys into service. Advantage was taken of the various fairs and exhibitions to demonstrate improved weaving appliances and to exhibit products of the Cottage Industries Institute. The total net cost of the Department was Rs. 7,21,077, as against Rs. 7,46,934 in the previous year,—68 per cent. of it being spent on technical and industrial education.

The activities of the Bombay Industries Department were extended during the year by the creation of two new appointments, one for an industrial chemist and the other for an industrial engineer. The Department continued through its 8 weaving schools and 14 peripatetic demonstration parties to foster cottage industries and to impress upon its classes the advantage of adopting modern appliances. The work of organizing the weaving industry in Sind was for the first time taken in hand, and two weaving schools, two demonstration parties and an additional dyeing demonstration party were sanctioned for this area. The Sind handloom weavers, who till then were unacquainted with the fly shuttle loom, were taught its use as well as new patterns for cloth. A scheme for opening a central hand-weaving institute at Poona was also sanctioned, and the weaving schools at Balganur and Broach were further developed. The total number of technical and industrial schools in the Presidency was 41, with 2,475 students under training. The V. J. Technical Institute, which is recognised as the chief technical institute, continued to do good work, and of the 118 students who appeared for the examination of the City and Guilds of London Institute, 54·2 per cent. were successful. Progress was also reported at the two other important technical institutions, namely, the R. C. Technical Institute at Ahmedabad, and the Parekh Technical Institute at Surat. A special scholarship for the study of textile manufactures in England was awarded during the year, and an extension of two years were granted to the scholar under training there in electrical engineering. In addition, two new scholarships were awarded for training in India in electrical engineering, and three for training in chemistry. The total expenditure of the Department during the year amounted to Rs. 1,05,900 as against Rs. 77,600 in 1928-29.

Owing to financial stringency, it was not found possible to introduce any new scheme during the year for improving industrial

education in the Central Provinces, and no State scholarship for foreign study was awarded. The 10 technical institutions in the Province, however,—which had a total enrolment of 431 at the end of the year,—were assisted to the extent of Rs. 38,188. Of the students that passed out of these institutions 70 were carpenters and 48 smiths. Tailoring classes were opened during the year at the Robertson Industrial School at Jubbulpore, and the Government School of Handicrafts at Akola. The Government Engineering School at Nagpur had an enrolment of 174, and the examination results were satisfactory. The two peripatetic demonstration parties continued work, and visited 136 weaving centres during the year, introducing 608 additional sleys. The total number of improved appliances that have been issued by the weaving branch now amount to 14,977 sleys, 2,742 dobbies and 180 warping machines. As the manufacture of these appliances has now become a local industry, the total number supplied through the Department is declining. Nearly 50 per cent. of the weavers now possess appliances of an improved type, and their output has been increased as a result by nearly 75 per cent. In addition to the two existing demonstration parties, the Government sanctioned two more demonstration parties, consisting of six teachers, for a temporary period of three years beginning in April 1931. The emporium in which the products of village industries are stored attracted more attention than formerly, and a number of orders, though for small amounts, including two from overseas, were secured. Some increased activity was also reported in the leather tanning school.

In Madras, the Industries Department increased its activities in several directions during the year. Among the more important developments were the grant by the Government of a lease of forest land not exceeding 30,000 acres for ten years for the extraction of soft wood required for match manufacture; the grant by the Board of Industries of a loan of Rs. 10,000 for the establishment of a tobacco re-drying factory; and the amendment by the Legislature of Section 9 of the State Aid to Industries Act in such a way as to enable loans up to a limit of Rs. 40,000 to be obtained by industrial concerns even if the loan exceeds 50 per cent. of the net assets of the enterprise. This last step should do much to encourage the development of small as well as large-scale industries in the Presidency, and it is worthy of note that the Cottage Industries Com-

mittee appointed in 1929 reported during the year in favour of immediate action being taken to develop 15 different industries. Another useful innovation was the appointment of a research engineer to improve the appliances used in the textile and other indigenous industries. Within the period under review he succeeded in designing a lathe for cutting chanks and a simpler and cheaper apparatus for drying sized yarn. A Ceramic Assistant was also appointed during the year to investigate the prospects of developing the pottery industry. Experiments were started during the year in coir retting and in the use of the spinning mill for making ropes. The Leather Research Chemist conducted some promising experiments in the manufacture of hand-made paper, with a view both to reducing the cost of production and improving the quality. The textile branch was mostly engaged in training the men necessary for organizing the handloom weaving industry, and the six peripatetic weaving and dyeing parties continued to function satisfactorily during the year. The Textile Advisory Committee which was constituted in 1929 to advise Government on all matters relating to the improvement of the industry and the betterment of the weaving classes is reported to have done some useful work. The activities of the Coonoor Silk farm were confined to the hybridization of worms and cultural improvement of mulberry plantations. The possibility of using the Palmaner plateau for the development of sericulture is being examined. Owing to the unsatisfactory trade conditions, the Kerala Soap Institute worked at a loss of Rs. 21,352, but there was a good demand for the insecticidal soap it manufactures. The Institute has succeeded in producing a soap suitable for use with sea water. Experimental manufacture of printers' ink was the chief work carried out in the Government Industrial Institute, Madras, and the quality of the ink has been approved by some leading presses. The Industries Department's engineering branch extended its activities, and the value of the worked turned out by the workshops amounted to Rs. 2,20,685 as against Rs. 1,66,870 in the previous year. The total number of technical and industrial schools in the Presidency was 73, of which 10 were maintained by Government, the rest being aided institutions, which were assisted to the extent of Rs. 1,42,571. The total enrolment of these schools was 5,608 as against 5,636 in the previous year. The enrolment in the Government Industrial Institutes at

Calicut and Bellary almost doubled during the year. The scholarships awarded included four State scholarships tenable in the United Kingdom for two years, 11 scholarships for training at the Victoria Jubilee Technical Institute at Bombay, two at Benares Hindu University, five at the Bangalore Institute of Science, and one at the Dhanbad School of Mines. The net cost of the Department during 1929-30 amounted to Rs. 17,19,641, as compared with Rs. 12,48,414 in the previous year.

In the Punjab, no fresh schemes for extending the scope of the Industries Department were undertaken, owing to financial stringency, and work was confined to consolidating existing institutions. With the opening of the two new schools at Rewari and Panipat, the number of Government industrial schools increased to 26, and their enrolment to 3,963. In addition there were five aided institutions. The total number of pupils undergoing industrial education advanced from 3,323 to 4,336, of whom nearly 50 per cent. were of the artisan class. The total expenditure on industrial education advanced from Rs. 2,79,488 to Rs. 3,70,517. A State scholarship for training in the technology of oil-refining was granted during the year, and a sum of Rs. 3,520 was awarded in local scholarships. Industrial schools were reported to be becoming increasingly popular. As many as 36 new teachers were added during the year, and there was scope for more. Enrolment in the middle department of industrial schools increased by 623 to 2,606, and of the 209 candidates who appeared for the industrial middle school examination 106 were successful. The Government Metal School at Ambala started work during the year, and the Hindu Industrial School at Kot Adu was brought on to the grant-in-aid list. An improvement in attendance and examination results was recorded at the Hindu Technical School, Lahore, and the Maclagan Engineering College at Moghalpura and the Government School of Engineering at Rasool maintained their standard of good work. All the eight candidates who sat for the different parts of the A.M.I.M.E. examination held for the first time in Lahore succeeded in passing, two receiving honourable mention and one gaining the prize awarded for a foreign candidate. Although actual sales declined, owing to the trade depression, the Mayo School of Arts and Crafts continued to make progress, especially in the production of readily marketable designs of craftwork. Of the 25

students of the Government Institute of Dyeing and Calico Printing at Shahdara who appeared for the City and Guilds of London intermediate examination 22 were successful and four gained medals and prizes. The total number of students at this Institute was 90. The Central Weaving Institute at Amritsar continued to attract a large number of students. It now supplies silk hangings and upholstery cloth for the Indian Stores Department, and has succeeded in evolving a new type of handloom which turns out two pieces of cloth at a time, twice as long as those produced on the old type of fly shuttle loom. The Government Hosiery Institute at Ludhiana is reported to be steadily gaining in reputation, and to have received applications for admission from several distant Provinces. Owing to the abnormal fall in the price of cotton, the Government Demonstration Weaving Factory at Shahdara, for the first time in its existence, worked at a loss of Rs. 23,157; the total production, however, was 825,542 yards, and sales worth Rs. 1,12,506 were effected. New industrial schools opened during the year included a women's school at Ambala, a girls' school at Ludhiana, a Hindu school at Multan and a Muslim school at Amritsar. The Government Zenana Industrial School at Lahore continued to develop, attendance rising from 172 to 200, and the Lady Maynard Industrial School for Women also made good progress. Throughout the Province the peripatetic tanning demonstration parties continued to do good work during the year in demonstrating improved methods of flaying, curing and tanning. Although the handloom weaving industry and the carpet industry suffered considerably from the effects of declining prices, the year was one of steady progress for the iron and metalware industry.

In the United Provinces, almost all the industries appear to have been badly affected by the trade depression, though the *swadeshi* movement for a while gave some impetus to the handloom industry, and the silk industry received a temporary stimulus from the numerous marriage ceremonies that took place in anticipation of the Sarda Act. The gross expenditure on the Industries Department rose from Rs. 12·43 lakhs to 14·10 lakhs, and revenue from Rs. 59,000 to Rs. 1,81,400; but the apparent increases were partly due to a changed system of accounting. Fair progress was maintained in the Government technical and industrial schools, whose number remained the same as before; the enrolment, however, declined from 2,008 to 1,758. Three long-term and four short-term

scholarships for study abroad were awarded during the year, the total amount spent on stipends and scholarships being Rs. 73,835. Of the 613 candidates who appeared for the examinations conducted by the various institutions, 88 per cent. were successful. The Benares Central Weaving Institute, which had 103 students under training, showed particularly good results, since of the 68 candidates who appeared for the final examination, 63 passed. This Institute, which was visited during the course of the year by the Director of Industries of Mysore, and the Textile Expert of Hyderabad, experimented upon a large number of designs of fabrics, such as jumper cloth, pillow cases, silk dhoties, borders, brocades, shoe pieces, fancy table cloth and other articles. The Wood working Institute at Bareilly was successful in its research into kiln seasoning of woods, and about 39,660 square feet of timber were seasoned. Some preliminary work was done in the assembling of a portable cane-crushing plant at the Technological Institute, Cawnpore, with the help of a grant of Rs. 5,000 by the Board of Industries. The U. P. Arts and Crafts Emporium increased its business from Rs. 24,773 to Rs. 31,044, *i.e.*, by about 33 per cent., and participated in the Leipzig and the British Industries Fairs. There were 10 model weaving schools in the Province during the year, all of which sent out peripatetic demonstration parties, visiting a total of 55 places and introducing 343 new fly-shuttle looms. Aided institutions in the Province amounted to 67, as against 85 in the previous year, and had 1,720 students on their rolls. A sum of Rs. 74,388 was paid as grants-in-aid to these institutions and to various industrial concerns.

We may now proceed to consider the question of Public Health, which, as we have seen in Chapter VII, is under present conditions largely the concern of the provincial Governments. Some indication has already been given in that Chapter of the extraordinarily difficult problems which confront the medical authorities in this country. Climate and other circumstances of nature in any case render the people of India prone to many devastating epidemic and contagious diseases, and the social and religious customs of the country place great obstacles in the way of improvement. Yet, in spite of this, public health in India has certainly been improving, if not from year to year, at any rate from decade to decade. Since the regular Census was started half a century ago the population has grown enormously, as will be seen from the diagram facing

page 146; and although the greater part of this growth has doubtless been due to the absence of war, administrative security and comparative freedom from famine which followed the establishment of British rule, the spread of medical facilities and the development of organizations for dealing with epidemic diseases such as cholera, plague, kala-azar and malaria have played an important part also. In recent years, with the assistance of the provincial Governments, Municipalities and other local bodies have been taking an increasing share in these activities, not only by providing medical relief, but also by improving sanitation and by instructing the people in elementary notions of hygiene; and the number of hospitals, dispensaries and trained medical practitioners is growing yearly.

The working of the Public Health Department in Assam during 1930 showed that progress in improving the sanitary conditions of the Province, and particularly in coping with epidemic disease, was well maintained. The total number of births registered during the year was 214,835, which exceeded the deaths by 68,216, and resulted in a natural increase of 9·95 *per mille* in the total population. The increase was fairly uniformly distributed throughout the Province. Although the birth rate (31·35) was lower than in the previous year (32·77), it was above the quinquennial average (30·83). Nevertheless, with the exception of Bengal, Burma, and the Frontier Province, it was lower than in any other Province in India. The mortality figures gave even more cause for gratification, since although the death rate (21·40) was higher than in the previous year (20·91), it was below the quinquennial average (22·42) and was less than in any Province except Burma. The slight increase over the previous year's figure was due mainly to the severer incidence of malaria in Nowgong, Sibsagar, and Lakhimpur Districts. As compared with 1929, the death rate under all heads except "fevers" showed a decline, the decrease being particularly marked in the case of cholera, small-pox and kala-azar, which demonstrates the increasing popularity and success of the preventive measures undertaken by the Department. In the case of kala-azar,—a disease whose history in Assam has already been discussed in Chapter VII,—mortality declined further from 1,405 to 953, and the number of recorded cases from 23,804 to 16,430. The fact that despite this the total mortality from "fevers",—which accounted for 61 per cent. of the deaths,—was higher by 6,262 than

in the previous year and was due mainly to effects of malaria. Anti-malarial measures were carried out as usual, over 8,084 packets of quinine being sold; but the disease is certainly very prevalent and troublesome in the Province, owing no doubt in large measure to the exceptionally heavy rainfall. Apart from the work done by the Department, special investigations into the disease were begun during 1931 by the Assam Medical Research Society in collaboration with the Ross Institute, with the aid of funds provided by Government, the Indian Research Fund Association, and various private interests. This co-ordinated effort may be expected to lead to some improvement. As regards cholera, cases during the year were confined to Goalpara, Sylhet and Kamrup Districts. During the year 220,532 c.c. of cholera vaccine and 112,213 dozes of bacteriophage were issued, and 145,498 persons, exclusive of tea-garden coolies, were inoculated. The incidence of small-pox declined in all Districts except Goalpara and Lakhimpur. The total number of vaccinations performed was 660,194. The Department maintained five mobile epidemic units, each consisting of three sub-assistant surgeons and six disinfectant carriers, on general preventive work throughout the year, but this number is not considered sufficient. Public health propaganda was carried out on the usual lines, and medical inspection of schools was introduced for the first time. Assistant surgeons on kala-azar duty during the course of their tours gave 550 demonstrations and lectures, which were attended by approximately 37,453 people. As regards infantile mortality, the rate was 174·44 *per mille*,—an increase on the average for the three previous years, but nevertheless lower than the corresponding figures for all other Provinces except Bihar and Orissa, the United Provinces, and the Frontier Province. Several maternity and child-welfare exhibitions were held, at which there were magic lantern demonstrations and lectures, and the work of training *dais* proceeded. The 17 Municipal Boards and the eight Town Committees spent a total of Rs. 5,62,055,—or 43·82 per cent. as compared with 45·52 per cent. in the previous year,—of their total income under different heads on sanitation. In addition Rs. 2,18,370 was spent on public health by the 19 local boards. The total number of patients treated at the Province's 249 hospitals and dispensaries was 1,737,409 as against 1,704,850 in the previous year.

In Bengal, during 1929,—the latest year for which figures are available,—the birth rate was 29·3 and the death rate 23·5 *per mille*,

both being lower than in the previous year. The former was slightly above the quinquennial average, but the latter was 7·1 per cent. below it, and was the lowest on record since 1911. The total number of births and deaths was respectively 1,361,278 and 1,094,263, representing an increase in population of 5·8 *per mille*, a figure larger than in any year since 1922. Except for Burma, the birth rate was lower than in any other Province, and only Burma and Assam had a lower death rate. Mortality was highest in Nadia, Rajshahi, Jessore, Darjeeling and Calcutta. The infantile mortality rate at 179·9 *per mille* was higher than that of the two preceding years but was lower than the quinquennial average. Mortality from cholera and small-pox was lower by 41 and over 50 per cent. respectively than in 1928 and 1927, though still above the average for the quinquennium 1921-26. The decrease was very largely the result of intensive preventive measures. As many as 1,500,000 cholera inoculations were performed during the year, and a very large number of wells and pools were disinfected. Research work carried out by the Assistant Director of Public Health appears to have demonstrated that human carriers of cholera germs increase and decrease with the seasonal rise and fall in the incidence of the disease. About one-ninth of the total population, *i.e.*, 5,533,880 persons, were vaccinated against small-pox during the year; but there is evidence that the local authorities are still negligent in enforcing primary vaccinations among infants and young children. Deaths from "fevers" amounted to 713,531 or 65·2 per cent. of the total, but were nevertheless the lowest on record for the last 20 years. The decrease was mainly due to a decline in the number of deaths from malaria, which have been almost halved since 1921; but mortality from measles, typhoid, kala-azar and relapsing fever increased somewhat. Altogether 335,414 deaths were registered under malaria, the death rate thus being 7·2 *per mille*, as compared with 7·9 in the previous year. Nearly 9,000 lbs. of quinine were used as against 6,800 lbs. in the previous year. The total number of kala-azar cases treated at the 629 special kala-azar centres was 40,288. There was some increase in mortality from dysentery and diarrhœa, and from respiratory diseases, the death rate for the former having increased by 11·1 and for the latter by 25·3 per cent. Increased activity was recorded in the public health laboratories and in educational propaganda and publicity. A public health demonstration car fitted to the

Eastern Bengal Railway exhibition train was visited by 37,000 persons. As regards medical relief, 43 hospitals and dispensaries were working in Calcutta, and treated 689,282 patients. In the Districts, including the 43 dispensaries opened during the year, there were 1,144 dispensaries and 81 non-allopathic institutions. In several Districts there were also temporary dispensaries which rendered medical relief during epidemics and on the occasion of *melas*. The total number of indoor and outdoor patients treated in the District hospitals and dispensaries was 8,331,372 as compared with 7,938,979 in the previous year. The total cost of maintaining the Calcutta hospitals was Rs. 31,67,775, and of the District hospitals, Rs. 23,78,188. The new health circles opened during the year under the rural public health organization scheme amounted to 242, bringing the total up to 514. The total expenditure on water supply and sewerage works during the year amounted to Rs. 11,66,332. Out of the total net income of Rs. 92,94,616 of the 166 Municipalities in Bengal, a sum of Rs. 57,13,347 or 44·08 per cent. was spent on sanitary works; but the 26 District Boards spent only 15·5 per cent. of their income of Rs. 1,42,90,873 on medical relief, including sanitation and vaccination. The total expenditure on sanitary works by Government, Municipalities and District Boards amounted to Rs. 24,63,549 as against Rs. 55,31,567 during the previous year, showing a decrease of 55·4 per cent.

In Bihar and Orissa, the birth rate during 1930 was 36·2, as compared with 35·6 in 1929 and 38·3 in 1928. The death rate was also higher, being 29·6 as compared with 26·9 in 1929 and 25·3 in 1928. The increased mortality was due mainly to the continuance in North Bihar of the severe cholera epidemic of 1929, which was responsible for 15 per cent. of the total number of deaths. The epidemic had been anticipated and preventive measures had been taken. In addition to the 13 medical officers on the permanent staff, 25 epidemic doctors and 140 vaccinators were deputed to deal with the outbreak, and 731,000 doses of cholera vaccine were issued free of charge. Infantile mortality amounted to 137·8 *per mille*, as against 135·0 in 1929 and 133·1 in 1928. Mortality from small-pox remained about the same as also did the number of vaccinations performed, but more deaths were recorded under "fevers", the rate being 18·9 as against 17·7 in the previous year. Quinine sulphate weighing 501·2 lbs. was sold during the year, and 98,000 quinine tablets were supplied free to certain schools. Deaths from

plague, and from dysentery and diarrhœa, decreased, but those from respiratory diseases showed little change. In 11 out of 21 Districts, approved public health organization schemes were in operation under qualified medical health officers. Medical inspection of schools is progressing, and middle schools as well as high schools were for the first time inspected during the year. Propaganda by means of lectures, magic lantern shows, and so forth was continued, and an additional centre was opened by the Maternity and Child Welfare Society, which now maintains five. A scheme for subsidizing the training of indigenous *dais* was sanctioned by the Government during the year. Radium treatment for disease has received special attention in the Province, and more radium was purchased during the year by means of the donation of Rs. 1 lakh given by the Maharaja of Darbhanga. The Mental Hospital at Ranchi is reported to have done satisfactory work. At the beginning of the year there were 673 hospitals and dispensaries in the Province, and eight more were opened. The total number of patients treated in them was 6,781,880 as against 6,447,932. The total expenditure by the Public Health Engineering Department on water supply and sewage schemes increased from Rs. 4·34 to Rs. 6·70 lakhs. Of the projects carried out at Government expense the most interesting was the Sonepur water supply scheme, which was completed during 1929. Work on the Puri water supply scheme was still in progress.

In the Bombay Presidency, except for a higher incidence of mortality from cholera and small-pox, the state of public health during 1930 showed some improvement. Deaths declined from 585,046 to 566,003, and births from 738,520 to 716,952. The death-rate was 29·53, as against 30·53 in the previous year. The natural increase of population amounted to 7·8, as aganst 7·7 *per mille.* The birth-rate at 37·41 *per mille,* although lower than in 1929 (38·27), was higher than in any other Province except Madras, the Punjab, and the Central Provinces. Moreover faulty registration in Gujerat resulting from the Civil Disobedience Movement, and the confusion caused by the floods in Sind, are likely to have rendered the recorded birth-rate somewhat lower than the actual. Cholera was prevalent during the year in all the registration districts except Sind, and there was a severe epidemic of small-pox in the Western, Gujerat and Central registration districts. Deaths from cholera amounted to 15,142 and from small-pox to 21,341,—

the latter being the highest figure on record. There was, however, a substantial decline in the mortality recorded under the heading "fevers"—the death-rate from these causes being 11·65 as against 12·86,—and there was also a marked diminution in the incidence of plague. Deaths from malaria amounted to only 21,119 as against 30,851. There was a slight rise in the mortality from dysentery and diarrhœa, but that from respiratory diseases remained stationary. Anti-malarial measures were continued as usual, and 3,066 villages were visited by 42 sub-assistant surgeons who treated 53,110 cases. Particular attention was devoted to Sind where the floods rendered conditions particularly favourable for an outbreak; and owing to the effective measures taken, no unusual incidence of the disease was reported. A total of Rs. 82,750 was devoted to the distribution of quinine throughout the Presidency. Preventive action was also taken against the cholera outbreak; 29 medical officers were constantly on duty, and 134,097 anti-cholera inoculations were performed. Small-pox vaccinations during the year numbered 925,955, and cost Rs. 6·43 lakhs. Infantile mortality during the year declined from 188·95 to 187·14 *per mille*, the various child welfare and maternity associations having done some very useful work. Of the total income of Rs. 4,45,24,222 of the 155 Municipalities in the Presidency, about 30·6 per cent. was spent on various public health measures, but the corresponding figure for the 249 District and *taluka* Boards, which had an aggregate income of Rs. 1,62,83,957, was only about 5·6 per cent. As regards the number of patients treated in the various hospitals and dispensaries in the Presidency, figures for 1930 are not available, but in 1929 the total was 3,916,354 as against 3,708,159 in 1928.

In Burma, the birth rate has risen steadily since 1925, and during the year it reached 28·87 *per mille*, which was 2·80 above the quinquennial mean. Even so, it was lower than in any other Province except Bengal and the Frontier Province. The death rate declined by 1·24 to 20·82, a figure which no other Province can equal. The infantile mortality rate, however, was very high, and although less by 23·71 than in the previous year amounted to as much as 202·26 *per mille*. The year generally was remarkably healthy, mortality from cholera, plague, and small-pox being all below the quinquennial average. The combined figure from these three heads was the lowest on record since 1905. The death rate from cholera was the lowest since 1872. Anti-cholera inoculations

during the year numbered 40,052, and vaccinations, 984,273. Mortality from dysentery and diarrhœa, respiratory diseases, and leprosy, all declined. On the other hand, there was some increase in deaths from "fevers", which accounted for 37·26 per cent. of the total mortality. As many as 3,786,300 *cinchona* tablets were issued during the year, 482,000 of them being distributed free. Propaganda work continued to make progress. A public health demonstration car which was fitted to the special commercial advertising train attracted a great deal of attention and during a 23 days' itinerary was visited by thousands of people. The Hlegu peripatetic health unit with a staff consisting of a health officer, a nurse, four sanitary inspectors, four midwives, and others, continued its operations, and was granted an additional subsidy of Rs. 10,000 by the Government and the Insein District Council. Child welfare work noticeably improved, and there are now nine towns in Burma which employ a health visitor or nurse for supervising the infant welfare centres. Medical inspection of schools is also developing, and 237 of the 303 institutions recognised by Government are now subject to it. The total number of patients treated in the 301 hospitals in Burma during the year was 2,491,108,—an increase of 112,984.

The year 1930 was an unhealthy one in the Central Provinces, chiefly owing to the cholera epidemic, and the death rate rose from 34·13 to 37·76, the quinquennial average being only 32·14. The birth rate, however, also rose sharply, the figure being 47·74 as against 43·96 in the previous year and a quinquennial average of 45·20. There was thus a natural increase of population of 9·98 *per mille*. Both the birth rate and the death rate were higher than in any other Province, as also was the infant mortality rate, which amounted to 241·82, as against 240·49 in the previous year. Deaths under the heading "fevers" numbered 287,330, which was higher than in any year since 1921, and represented a death rate of 20·66 *per mille* from this cause alone. Deaths from cholera amounted to 28,250 as against 6,168 in 1929. The outbreak was most serious in Berar. There was also a serious outbreak of small-pox, all Districts except Bhandara being affected, and the mortality was the highest since 1919. Mortality from plague declined to a figure which has not been approached since 1913, and the virulence of the disease appears to be progressively diminishing, but with this one exception deaths from all the recognized causes rose during the

year. The Department took prompt steps to cope with the various outbreaks, and 39 epidemic dispensaries were working during the year, apart from the 20 temporary dispensaries specially sanctioned to deal with the cholera outbreak. These travelling dispensaries visited 5,735 villages, treated 95,607 patients, delivered 7,562 lectures, and performed 139,845 anti-cholera and 4,457 anti-plague inoculations. The total number of anti-cholera inoculations in the Province was 253,043, and 616,909 small-pox vaccinations were performed at a cost of Rs. 2,10,285. The four anti-malarial dispensaries continued to work throughout the year, and Rs. 42,455 worth of quinine was supplied for sale through agencies; some was also distributed free to schools and in malarious tracts. Special steps were taken to reduce the Province's appallingly high infant mortality rate. In addition to organizing "health weeks" and "baby weeks" and having health workers trained for rural areas, 10 additional welfare centres were opened, and attendance at the various centres was raised in a year from three to over four millions. Attention was also devoted to the suppression of leprosy, and 32 treatment centres were opened in Chhattisgarh Division as a result of the survey previously undertaken there, and were very well attended. Medical inspection of schools was carried on as usual, all the schools being visited at least once every month. The two Health Publicity Officers visited 59 places and delivered 119 lectures. Out of the total municipal income of Rs. 97,68,566, as much as 26,76,972, or 36 per cent., was spent on public health measures, and Government in addition made a grant of Rs. 50,000 for expenditure on sanitary works in certain towns. The number of patients treated in the 340 hospitals and dispensaries in the Province,—which included 11 new ones opened during the year,—was 2,594,266, as against 2,510,245 in the preceding twelve months.

In the Madras Presidency the total number of births registered during 1930 was 1,632,475, representing a birth rate of 39·83, which was probably the highest on record, and exceeded the 1930 rates of all other Provinces except the Punjab and the Central Provinces. The 1929 rate in Madras was 37·9 and the quinquennial average 36·3. Deaths numbered 1,045,972, the death rate being 25·5 as against 25·3 in 1929 and a quinquennial average of 25·2. Despite the increase, this was better than in most Provinces, only Assam, Bengal and Burma having lower rates. The infant mortality rate unfortunately rose also, and although at 185·7 it was not

as bad as in many other Provinces, it nevertheless represented the worst return obtained in Madras since 1926. As regards the general death rate, there was a marked decline in mortality from the principal infectious diseases. Deaths from cholera decreased by 7,100, from small-pox by 1,683, and from plague by 342; there was also a decline in deaths from "fevers" and respiratory diseases, the former being less by 8,556 and the latter by 649. Mortality from all other causes however rose somewhat, the increase under dysentery and diarrhœa alone amounting to 1,228. No District was altogether free from small-pox, and cholera occurred in all Districts except the Nilgiris and South Kanara. The number of small-pox vaccinations performed was 1,134,634. The gratifying decrease in deaths from "fevers" appears to have been chiefly due to successful anti-malarial measures in the worst of the fever-stricken areas, namely the Circars and the Ceded Districts. Throughout the Presidency nearly 80,000 persons were treated for malaria, and 2,100 lbs. of quinine from Government stock were distributed free. Child welfare work did not progress so rapidly as had been hoped, owing apparently to the inadequacy of the provision made by local bodies for it. Nevertheless there were 110 welfare centres working as against 98 in 1929, and they employed a staff of five health visitors and 111 midwives. The Red Cross Society rendered most valuable help, particularly through its Health School. Propaganda work was satisfactorily maintained by means of cinema or magic lantern shows and lectures, and the various demonstrations were attended by several lakhs of people. Special attention was devoted to propaganda on the prevention and treatment of hookworm infection. In addition to the 244,144 hookworm cases dealt with in the hospitals and dispensaries 50,163 were treated by the field units. The public health staff was considerably increased during the year, and amounted to 401. A lady Assistant Director of Public Health was appointed, and a research unit was established. As many as 47 Municipalities employed Health Officers. No new water-supply or drainage schemes were initiated during the year, but five water-supply schemes were nearing completion. The number of medical institutions of all kinds in the Presidency was 1,128, of which 52 were meant solely for the benefit of women and children.

In the North-West Frontier Province the year was a comparatively healthy one. Births declined from 65,822 to 54,661, and

deaths from 50,547 to 46,747. The birth rate was 25·6 as against 30·8 in 1929 and a quinquennial average of 29·9, and was the lowest in India. The death rate at 21·9 was less than in any other Province except Assam and Burma, and although slightly above the quinquennial average compared well with the previous year's figure of 23·7. The infant mortality rate was also satisfactory, since it declined from 167·65 to 146·54 and was, if Bihar and Orissa is excluded, the lowest in the country. Deaths from small-pox amounted to only 73 as against 583, and mortality from "fevers" declined from 42,415 to 38,884. Only 449 deaths from cholera were recorded, and deaths from dysentery and diarrhœa, and from respiratory diseases, also showed a decrease.. The Province was free from plague. The Director and Assistant Director of Public Health visited all the important towns and villages during the year, and the Civil Surgeons in charge of the settled Districts carried out inspections in 147 places. Quinine was distributed free among the poorer people. There has been a steady increase in the work of the Provincial Health Laboratory, and the public has begun to appreciate its usefulness. Medical inspection of schools continued, and 23,649 children were examined. The total number of vaccinations performed during the year was 218,877. Of the total income of the Municipalities and District Boards, amounting in the aggregate to Rs. 51,90,487, sums totalling Rs. 7,88,960 were spent on sanitation and public health.

The Punjab also may be said to have had a fairly healthy year, despite the fact that the death rate rose slightly. This was due to an increase under the headings "fevers" and "other causes", but mortality under all the remaining heads declined. Cholera appeared only in a mild form, and the vigorous preventive measures adopted kept mortality down to 1,181. Deaths from plague numbered only 554, a lower figure than has been recorded for the last 30 years. Small-pox was present throughout the year, but deaths declined by 2,422 to 5,341. The vaccinating staff was increased from 526 to 534, and during the year the number of vaccinations performed was 1,729,000, an unusually large total. Dysentery and diarrhœa were confined mostly to the sub-Himalayan Districts, though they showed a comparatively high death rate. Unfortunately the mortality from "fevers", including malaria and influenza, was sufficiently great to counterbalance the decreases under the other heads, and amounted to 422,377 as against 402,429 in the previous year. This however was due

more to the consequences of the malaria epidemic of 1929 than to any new outbreak. Births registered during the year amounted to 887,521, the birth rate being 43·3 as against 44·5 in the previous year and a quinquennial average of 43·0. Deaths numbered 608,582, which gave a death rate of 29·7 as compared with 28·8 in the preceding year and a quinquennial average of 29·5. Both the birth rate and the death rate were the highest in India except for the Central Provinces. The infant mortality rate was 185·73, which is not a bad figure in this country. Each District in the Province now has its own Medical Officer of Health, among whose duties is the conduct of propaganda, and during the year these officers delivered 4,334 lectures to the general public and school children. The usual courses of lectures on hygiene in normal schools were continued. The Public Health Equipment Depôt at Jullundur functioned satisfactorily, and held medical stores worth Rs. 27,083 for issue to local bodies. The Public Health Laboratory, the Epidemiological Bureau, and the Punjab Vaccine Institute all maintained their standard of efficiency. Steady progress was also reported in maternity and child welfare work. The health centres supported by local bodies numbered 35, and 607 *dais* were trained in them during the year. The Sanitary Engineering Department had under construction 66 sanitary works, among them being the water-supply and sewerage scheme for the Chauburji Gardens Estate at Lahore, the Pathankot and Multan water-supply schemes, and the Rohtak waterworks. Out of their total income of Rs. 1,39,23,431, the 107 Municipalities in the Province spent Rs. 46,70,361, or 33·54 per cent., on public health measures, though the District Boards, out of their greater aggregate income of Rs. 2,15,36,394, spent only Rs. 6,16,518. Figures regarding dispensaries for 1930 are not available, but in 1929 their number increased from 964 to 1,026, and the scheme for providing rural dispensaries for every 100 square miles and every 30,000 of the population was brought almost to completion. The total number of patients treated at these institutions rose by nearly 2,000,000.

In the United Provinces, mortality under all the main heads except small-pox and plague increased, and the death rate worked out at 27·20, as against 24·26 in the previous year and a quinquennial average of 24·18,—the total number of deaths being 1,234,120. The birth rate however also rose from 34·33 to 37·31,—the quinquennial average being 35·24,—and there was thus a natural

increase in population of 10·11 *per mille*. The infant mortality rate rose from 168·6 to 170·8. Mortality from cholera has been steadily increasing in the Province since 1927, and in 1930 accounted for 61,334 deaths, as against 50,924 in 1929. Small-pox was responsible for 11,071 as against 11,725 deaths, but deaths from plague, which amounted to 80,943 in 1928, and 37,678 in 1929, totalled only 10,946 in 1930, which was the lowest figure recorded since 1903. Mortality from "fevers" rose from 810,583 to 942,469, which is well above the quinquennial average. A total staff of 33 Medical Officers of Health and 62 Sanitary Inspectors was employed by the Municipalities, and the district health service was in force in 28 Districts. Considerable progress was made with the "village aid" scheme, which was in force in 4,775 villages, the number of village dispensaries and sanitary wells being 1,501 and 1,594 respectively. Anti-malarial measures, including post-graduate training, lectures and propaganda, continued as usual. Malarial surveys were carried out in 15 different areas. Quinine worth Rs. 8,682 was issued for sale. The activities of the Hygiene Institute included, in addition to research and investigation work, propaganda by means of lectures and cinema shows, and several new films on health subjects were prepared. The epidemiological branch showed considerable activity; besides the Assistant Director of Public Health and four assistant medical officers, it had a staff for 43 travelling dispensaries, and employed 18 temporary medical officers to deal with epidemic outbreaks. The total number of anti-cholera and anti-plague inoculations performed during the year was 105,266 and 42,801 respectively, and small-pox vaccinations amounted to 1,560,908. The Hygiene Publicity Bureau did good work throughout the Province and held lectures for the Police Training School, the Provincial Civil Service Training School, and for *sarpanches*, *patwaris*, and inspectors of co-operative societies. Valuable service was also rendered by the child welfare and maternity staff of the Red Cross Society, especially by the Centres at Bareilly, Cawnpore and Allahabad, which together conducted 7,812 maternity cases. In the 28 Districts which have a district health staff, 6,490 *dais* were trained, and 53,820 infants and 23,041 mothers were treated. Health and Baby Weeks were held in 22 districts during the year. Medical inspection of schools was continued, and a total of 163,538 boys were examined. The Sanitary Engineer's Department carried out original works costing Rs. 14·68 lakhs during the year,

and had in hand work of the value of Rs. 12·76 lakhs on behalf of local bodies. Among the important drainage works undertaken were those at Agra, Ajodhia, Brindaban, Cawnpore, Hardwar and Jhansi. The total number of patients treated at the 563 hospitals and dispensaries in the Province was 5,975,238.

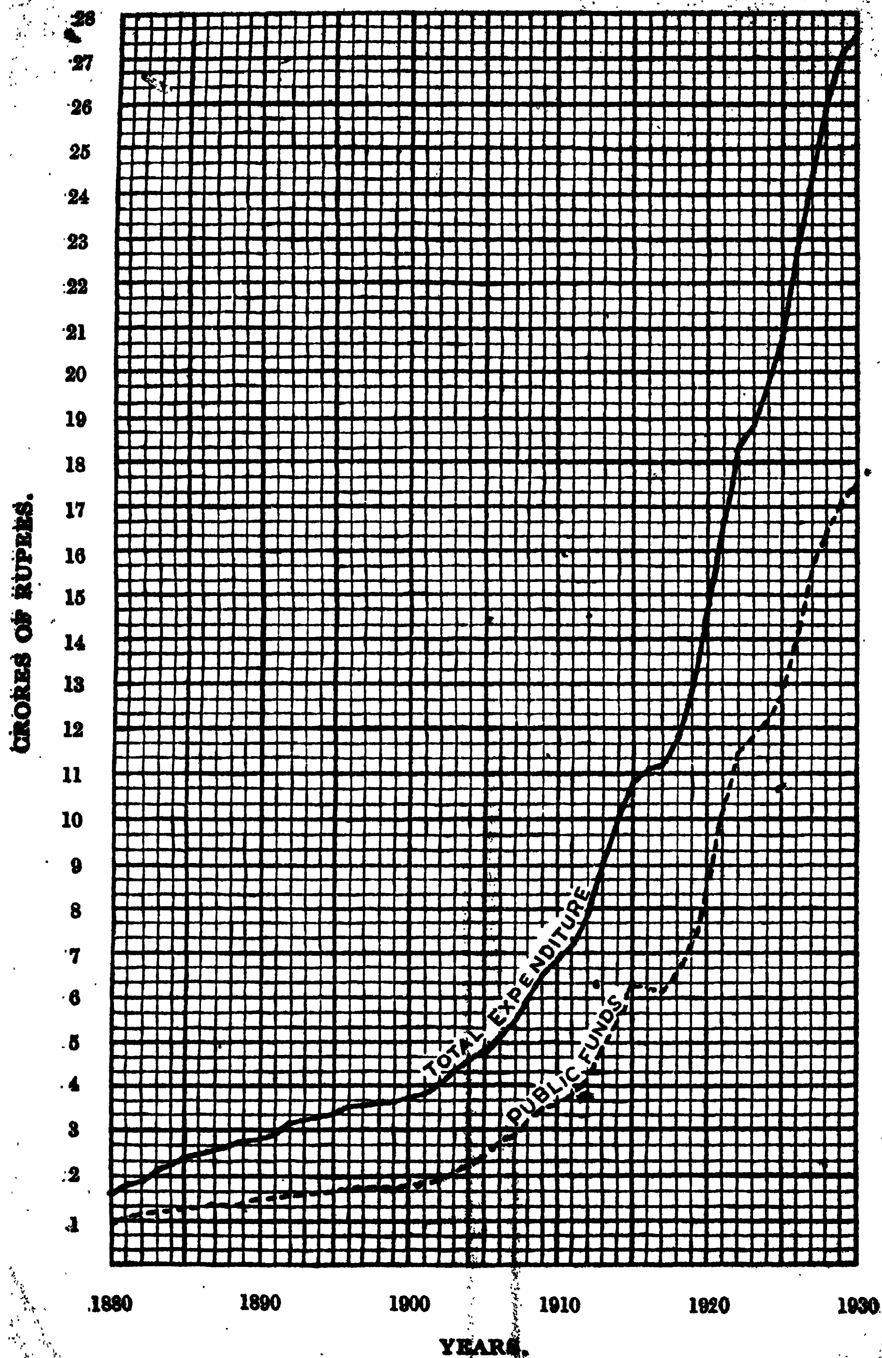
We may conclude this Chapter by considering the vitally important subject of education. The fact that approximately 229 out of the 247 million inhabitants of British India are illiterate,* necessarily constitutes a very serious obstacle to the attainment by the Indian peoples of full self-sufficing nationhood on modern democratic lines, and a variety of factors peculiar to the country, —such as the geographical isolation of the villages in which the vast majority of the inhabitants live, the apathy, poverty, and superstition of the masses, the prejudice against female education and against the employment of women teachers, and the tendency on the part of the more enterprising of the rural population to migrate to the towns,—necessarily render the diminution or removal of this obstacle an extremely laborious process. Nevertheless, the improvement which has recently been taking place throughout the country both in the demand for education and in the provision of it has unquestionably been very substantial; and no aspect of the problem is more interesting than the awakening among Indian women of a demand for intellectual enlightenment. Female education in primary schools has already, considering the circumstances, attained impressive dimensions, and the number of women undergoing instruction in secondary schools and in colleges is steadily increasing. Women are also being encouraged to take up physical training and vocational education, and propaganda in this cause is extending fast. In 1929-30 the number of recognised institutions for educating girls rose by 1,171 to 32,910 and their enrolment increased by 80,483 to 1,389,241; 817,284 girls moreover were under instruction in boys' schools, and the total number of girl pupils in recognized institutions was thus over 2 millions. The vast majority of these girls of course were reading in primary schools, and throughout the whole country there were only 235 women studying in medical colleges and 186 in training colleges for teachers. Nevertheless, even these figures represent some advance on those for the preceding year, which amounted to 230 and 166 respectively. Compulsory education is another matter that has

* This is according to the 1921 Census. At the time of writing detailed literacy figures from the 1931 Census were not available.

received an increasing amount of attention during the last decade. The Legislatures established as a result of the Montagu-Chelmsford Reforms soon declared themselves in favour of compulsory education on principle, though the Municipalities and District Boards have often been somewhat hesitant in putting it into effect, largely from fear that the imposition of the fresh taxation required to finance coercive measures might deprive members of their seats at the next elections. But this cautious attitude seems to be slowly disappearing, and compulsory primary education is now being steadily extended. During 1929-30 compulsion had been introduced in 132 Municipalities and 3,137 rural areas.

Ministers of the Provincial Governments have of late unquestionably displayed more courage and initiative with regard to education. The one-teacher type of village school is being gradually eliminated and considerable decentralization of control is taking place. Municipalities and local boards are being entrusted with wider powers, and many of them are exercising them wisely. Particularly satisfactory among recent developments has been the attention devoted to the education of children of the "Depressed Classes". Owing to differences in the provincial classifications, it is difficult to state precisely how many pupils belonging to this section of the population are now under instruction, but leaving aside Burma, where there are no Depressed Classes as the term is understood in India, and Assam, where it is hard to distinguish between them and the aboriginal and hill tribes, the total number of Depressed Class pupils reading in all kinds of institutions in the remaining seven Provinces was 1,035,883 during 1929-30, as compared with 1,005,125 in the previous year. This figure represents 3·60 per cent. of the total estimated Depressed Class population of these Provinces, as against an All-India figure for all communities of 5·06. Much leeway, of course, has still to be made up, and in all Provinces except Bengal the number of depressed class children who reach the secondary and University stage is still regrettably small. One satisfactory feature, however, is the increase in the number of Depressed Class pupils reading in ordinary schools and in that of caste Hindu pupils reading in the special schools intended for the Depressed Classes.

Progress has also undoubtedly been taking place in secondary and collegiate education recently, and more attention is being


GROWTH OF PUBLIC AND TOTAL EXPENDITURE ON EDUCATION IN INDIA.
CRORES OF RUPEES.
28
27
26
25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
TOTAL EXPENDITURE
PUBLIC FUNDS
1880
1890
1900
1910
1920
1930
YEARS.

the encouragement of the night school movement, the establishment of village libraries and elementary literary societies, and the device of encouraging medical men to settle in the villages. All these seem to be yielding some results. It is however difficult to form a clear idea of the progress made by adult education throughout the country, since in many Provinces no distinction is made between schools which really provide for the education of illiterate adults, and those,—especially night and part-time schools,—which are attended most largely by ordinary primary school children who are unable to attend day schools.

The following tables show at a glance the number of institutions and scholars in India, and the total expenditure on education in respect of recognised institutions during the year 1929-30.

Institutions and Scholars, 1929-30.

Type of Institution.	Institutions.		Scholars.	
	Males.	Females.	Males.	Females.
Recognised Institutions .	193,928	32,910	9,748,749	2,149,853
Unrecognised Institutions .	30,419	3,695	508,165	108,359

Total expenditure on Education in India, 1929-30.

(Recognized Institutions.)

1. From Government Funds	13,25,38,044
2. From Board and Municipal Funds	4,24,65,600
3. From fees	6,04,61,368
4. From other sources	3,88,17,006
Total .	27,42,82,018

Before we turn to consider in detail the progress of education in British India during 1929-30,—the latest year for which full particulars are available,—it seems desirable briefly to describe the way in which the educational structure in the majority of Provinces is organized. The control of public instruction is as a rule exercised by the Government through the Director of Public Instruction. The Government, however, generally deals direct with such Universities as there are on questions of higher education. Affiliated with the University or Universities are the colleges which prepare students for University examinations. Below the colleges come the high

schools, which prepare students for the school-leaving or similar examinations that qualify for admission into the lower branches of the public services. Side by side with the high schools are the middle schools, which teach the first few standards only of the secondary school course; there are also in some places separate high and middle schools for girls. Below the secondary schools come the large number of primary schools both for boys and girls, in which instruction is given in the vernaculars to the vast mass of the people. As a rule, the Province is subdivided into a number of "divisions", under the control of divisional inspectors, who are responsible for visiting the schools within their respective areas and reporting upon them to the Director of Public Instruction.

In Assam, the total enrolment in all classes of educational institutions rose by 23,988 to 363,250. Recognised institutions increased from 6,068 to 6,429, but unrecognised declined from 585 to 577. The percentage of male scholars to the total male population was 7·7, the corresponding figure for female scholars being 1·5. The total expenditure on education from all sources advanced from Rs. 51,43,957 to Rs. 53,58,860, of which 58·3 per cent. was met from provincial revenues. Contributions from provincial sources would have been higher had not Rs. 1¼ lakhs from the educational budget been diverted for relieving the distress caused by the floods. The number of students in Arts Colleges increased from 1,124 to 1,189, but there was a decline from 428 to 378 in the enrolment in degree and post-graduate classes. The results of the degree and intermediate examinations were on the whole satisfactory. The total expenditure on college education was Rs. 5,85,114. As regards secondary education, the number of schools for boys increased from 375 to 387, and enrolment from 54,926 to 59,364. Of the 1,182 candidates who presented themselves for the matriculation examination 839, of whom 44 were girls, were successful. Expenditure on secondary schools for boys increased from Rs. 12,88,722 to Rs. 14,17,183, high schools accounting for Rs. 8,79,181, middle English schools for Rs. 3,17,029, and middle vernacular schools for Rs. 2,20,973. Primary education also progressed, the number of institutions for boys increasing from 4,906 to 5,153, and their enrolment by 15,885 to 245,448. The difficulties, mainly financial, in the way of enforcing compulsory elementary education were however still acutely felt, though the funds obtained rose from Rs. 11,59,693 to Rs. 12,07,825. Over 60 per cent. of this was contributed from provincial revenues, and

only Rs. 20,000 were obtained from Municipalities. The need for a teachers' training college in the Province has long been recognised, but funds for it have not been forthcoming. The number of normal schools in the Province was 11, of which two were for women. Although the number of trained teachers increased from 3,570 to 3,679, as many as 5,556 teachers are still untrained. As regards female education, the total number of girl pupils increased from 49,175 to 56,566, of whom 28,078 were in girls' schools and 26,085 in recognized boys' schools. The number of male and female pupils from the hill tracts undergoing instruction was 29,066. Technical and industrial schools in the Province numbered 15 as before, but enrolment declined from 482 to 399. Political events caused some disturbance in the educational world during the year, but not so much as elsewhere.

In Bengal, the total number of educational institutions rose from 65,493 to 66,973, recognised institutions increasing from 63,910 to 65,452, and unrecognised institutions declining from 1,583 to 1,521. Pupils increased in number from 2,625,222 to 2,687,836, of whom 54,754 were in unrecognised institutions. Male students numbered 2,176,886 and female 510,950, as compared with 2,129,098 and 496,124 in the preceding year. The percentage of male scholars to the total male population was 8·82, the corresponding figure for females being 2·23. Expenditure on education rose from Rs. 434 to Rs. 444 lakhs, about Rs. 155 lakhs being derived from provincial revenues. The number of Arts and Science Colleges for men and for women remained unchanged at 44 and 4 respectively; enrolment increased from 20,822 to 20,871, and expenditure from Rs. 36,57,438 to Rs. 37,52,295. The number of students reading in colleges for men was 20,496, of whom 17,434 were Hindus and 2,613 Muhammadans. The 10 Government colleges accounted for 3,479 students, the 20 aided colleges for 9,416 and the 14 unaided colleges for 7,601. There was increased enrolment in the post-graduate Arts and Science Classes both at Calcutta and Dacca Universities. A donation of Rs. 1 lakh was made by Rai Bahadur Bihari Lal Mitra to the Indian Association for the Cultivation of Science. Secondary education also progressed, the number of schools increasing from 2,960 to 3,032. High and middle schools increased in number, but middle vernacular schools declined. Expenditure on secondary schools for Indian boys increased by over Rs. 5 lakhs to Rs. 1,25,41,532, of which about

Rs. 103 lakhs was met from private sources. Approximately 9,500 of the 15,155 candidates who appeared for the matriculation examination were successful. In 35 schools there were recognised courses in manual training, and several other schools were reported to be teaching subjects such as dyeing, weaving, carpentry, and smithy-work. As regards primary education, the number of schools rose from 57,656 to 59,124, and of pupils from 1,959,098 to 2,000,255, while expenditure increased from Rs. 81,12,862 to Rs. 83,76,809. Of the total number of pupils attending primary schools for Indian boys, 713,447 were Hindus and 863,593 Muhammadans. Teachers' training institutions declined somewhat in number, those for women remaining stationary at 10, and those for men decreasing from 95 to 93. There were 2,437 pupils under training in the men's schools, and 220 in the women's. Two State scholarships for the professional training abroad of graduate teachers,—one to a Moslem and one to a non-Moslem,—were awarded as usual. Female education also progressed, the number of schools for Indian girls increasing from 16,798 to 17,129, and of pupils from 423,005 to 435,463. There was a very satisfactory increase, from 24 to 33, in the number of high schools for girls, and the increase in the number of girls reading in high schools was still more remarkable, being as high as 40 per cent. Of the 345 girls who appeared for the matriculation examination, 223 passed. There was a slight decrease in the number of middle English schools for girls and in their enrolment, but primary schools for Indian girls rose from 16,406 to 16,743 and pupils in them from 462,627 to 476,573. The total number of girls under instruction, allowing for the boys reading in girls' schools and the girls reading in boys' schools, was 505,770, of whom 223,999 were Hindus and 271,990 Muhammadans. The 4 Arts Colleges for women passed out 44 graduates, and 80 students were successful in the intermediate examination. As regards technical and industrial education, in addition to the Bengal Engineering College and the 3 Commercial Colleges recognised by Government, there were in the Province 2 engineering schools, 128 technical and industrial schools, 28 commercial schools, and in addition 29 technical, industrial, or commercial schools for women. The numbers on the rolls at the Bengal Engineering College, the Ahsanulla School of Engineering at Dacca, and the Government Commercial Institute at Calcutta were 298, 470 and 355 respectively, as against 277, 417, and 278 in the previous year.

In Bihar and Orissa all the main classes of educational institutions showed an increase both in number and enrolment during the year except primary schools, which amounted to 28,672 as against 29,673. There was also a decrease of 54 in the number of unrecognised schools for males. The total number of educational institutions in the Province amounted to 31,735, and of pupils to 1,101,289. The recognised institutions numbered 30,269. The percentage of male pupils to male population decreased from 6·03 to 5·86, and of female scholars to total female population from ·69 to ·68. Expenditure however rose by nearly Rs. 4¾ lakhs to Rs. 1,85,16,071, of which about 35 per cent. was paid from provincial revenues. The number of Arts and Science Colleges remained 11, but the number of students in the 7 first-grade colleges rose from 3,717 to 3,763, and expenditure on them from Rs. 11,39,949 to Rs. 11,44,911. Enrolment in Patna Law College declined somewhat, but expenditure increased from Rs. 53,496 to Rs. 66,483. Two noteworthy events during the year at Patna University were the measures taken to maintain the examination standard by restricting the scope of supplementary examinations, and the provision of Rs. 1,04,000 for the endowment of research scholarships. Secondary education also made progress, the number of institutions rising from 822 to 856, and of pupils from 125,251 to 132,917; expenditure also increased from Rs. 36,34,124 to Rs. 38,87,316. High and middle schools for males numbered 817, and for females 39. Owing to the comparatively high cost of education in middle vernacular schools, and the obvious advantages of a knowledge of English, there was a tendency to convert these schools into middle English schools, and the number of schools of this type increased by 64. As regards primary education, the set-back was entirely due to reduction in the contributions from public funds, which amounted to only 2·7 per cent. of the total cost. Non-recurring grants of Rs. 1,50,000 and Rs. 68,872 were made to District and Municipal Boards for expenditure in primary school buildings, but the total funds decreased from Rs. 62,15,957 to Rs. 61,81,967. Although the number of schools declined by 1,001, some satisfaction can be derived from the fact that the least efficient schools were eliminated. There was also a gratifying increase in the number of trained teachers in primary schools, which rose from 16,509 to 16,991. There were 5 secondary and 115 elementary training schools maintained by Government, and three aided training schools for boys, in addition to five Government and

10 aided training schools for girls. The training provided, however, is not yet very efficient. Technical education in the Province continued fairly satisfactorily. There were altogether 66 technical, professional, and vocational institutions, including 37 engineering and 11 commercial schools. Expenditure on them however declined slightly from Rs. 8,34,495 to Rs. 8,32,150. As regards female education the total number of girls' schools decreased from 2,780 to 2,672, and of pupils from 118,950 to 117,082, owing of course to the decline in the number of primary schools. Enrolment of girls in secondary schools however rose by 796. There is no self-contained college for girls in the Province. The total direct expenditure on female education was Rs. 8,78,642, —Rs. 33,015 more than in the previous year. Towards the close of the year Government issued an important resolution with regard to female education, laying it down as their policy that each District should have at least one Government or privately managed middle school for girls, and abrogating the expenditure limit of 15 per cent. of the available funds that hitherto applied in respect of primary female education. They also emphasized the desirability of co-education. The number of teachers' training schools and of technical, industrial and agricultural schools for girls remained 12 during the year, but expenditure and enrolment were both somewhat

In the Bombay Presidency the total number of educational institutions increased during the year from 17,132 to 17,222, and of pupils from 12,62,244 to 12,93,648, recognised institutions increasing by 231 to 15,912 and unrecognised institutions decreasing by 141 to 1,220. There were 10,00,818 male and 2,61,426 female pupils, and 9,67,787 Hindu and 2,30,418 Muhammadan pupils. Expenditure on public instruction rose by Rs. 6,85,677 to Rs. 4,03,03,136, of which 52 per cent. was derived from provincial revenues. The total expenditure of Bombay University amounted to Rs. 8,17,056, and receipts to Rs. 10,40,347. The latter included a sum of Rs. 1,17,000 representing the first payment of an annual grant which Government have undertaken to make under the new University Act, which came into force in January 1929. In addition, Government make an annual payment of Rs. 5,000 towards the cost of the University Foreign Information Bureau, which continued to do useful work. The Senate, Syndicate, and Academic Council were duly constituted under the Act during the year, but

the working of the Act during the last six months brought to light evidence of hasty drafting and three amending Bills have since been passed into law. The successful working of the experiment in compulsory physical training in the three Arts Colleges at Poona led the University to appoint a Committee to prepare a scheme for introducing physical training in all colleges. As a result of a handsome donation by Sir Ness Wadia and Mr. C. N. Wadia, the Fergusson College was able to construct a fine new building for its library of 40,000 books. The total number of students in the 14 arts colleges and 11 professional colleges affiliated to the University increased by 967 to 10,766, of whom 7,952 were in Arts Colleges. The number of women students in arts colleges was 565 and in professional colleges 85. The total expenditure on arts colleges, including the University School of Economics and Sociology, rose by Rs. 50,101 to Rs. 20,50,824, of which 32·7 per cent. was obtained from provincial revenues. Expenditure on professional colleges amounted to Rs. 12,66,345. The number of students reading in the 4 law colleges increased from 1,175 to 1,256, including 5 ladies. There were 336 students undergoing training in engineering and 324 in commerce. The number of other technical and industrial institutions was 41 as in the previous year, but their enrolment decreased slightly to 2,475. As regards secondary education, the number of Anglo-vernacular schools for boys increased by 31 to 482, and their enrolment by 3,038 to 91,500. Of these, 73,669 were Hindus and 9,982 Muhammadans. Expenditure increased by Rs. 1,51,470 to Rs. 56,76,578, of which 26·3 per cent. came from provincial revenues and 54·1 per cent. from fees. Of the 4,787 teachers, only 833 were trained. Primary schools increased in number during the year by 213 to 14,819 and enrolment rose by 28,790 to 10,78,894. Of these 2,32,550 were girls. Expenditure on primary education advanced by Rs. 3,28,640 to Rs. 2,01,52,307, the Government contribution being Rs. 1,26,11,430. Teachers in primary schools increased in number by 281 to 36,856, and 47·5 per cent. of them were trained. During the year 4 local authorities introduced schemes of compulsory elementary education, and the number of areas under compulsion was raised to 12; similar schemes have been sanctioned though not put into effect in an additional 20 areas. There were 29 training institutions for primary school teachers, with a total enrolment of 1,221 pupils, of whom 529 were women. Expenditure on training institutions decreased somewhat.

It is recognised that the training of primary school teachers should be better adapted to rural conditions, and the Nasik Training School has been transferred to a village in Poona District with this object in view. As regards female education, the number of institutions declined by 6 to 1,935, of which 87 were unrecognised. The number of girls undergoing instruction however increased by 12,668 to 2,61,426, of whom 92,717 were reading in boys' schools. The percentage of girls under tuition to the total female population was 2·77, the corresponding figure for boys being 9·87. The number of women in colleges increased substantially from 492 to 650, of whom no less than 565 were in arts colleges. The total expenditure on female education allowing for girls reading in boys' schools was Rs. 54,15,339.

In Burma,—where the standard of literacy is much higher than in India proper,—unrecognised institutions greatly exceeded recognised in number, and amounted to 18,072 as against 7,418. The latter figure was higher by 136 than in the preceding year, and enrolment in recognised institutions increased by 25,361. Under the special five years' programme, which came to an end during the year, 293 more schools were opened, making a total of 1,250 for the whole period. The percentage of male pupils to the total male population in the recognized institutions only was 4·79, the corresponding figure for females being 3·17. The majority of the unrecognized schools in Burma, which contain no less than 1,97,256 pupils, are managed by monastic or other religious orders, mainly of course Buddhist. There are however 129 Muhammadan schools. The total expenditure on all classes of recognised educational institutions in the Province during the year was Rs. 2,22,14,047,—Rs. 5,84,304 more than in the preceding year. Of this total Rs. 96,12,903 or 45·54 per cent. was derived from provincial revenues. The number of students undergoing collegiate education was 1,692. Of these 1,277 were in the University College, and the remainder either in the Judson College at Rangoon or the Intermediate College at Mandalay. The total cost of collegiate education was Rs. 16,79,086,—an increase of Rs. 67,023. An important event of the year was the establishment of a Teachers' Training College at Rangoon as a constituent part of the University with a constitution similar to that of the University College. As a result, the five Anglo-vernacular normal schools in the Province, in which 152 students were under training during the year, have been closed. The buildings for the new Medical College were completed and

equipped during the year. The Burma Oil Company College of Engineering and Mining and the University Departments of Forestry and Law continued to be controlled by the University. There were 22 students undergoing instruction in forestry. Work in the Government Technical Institute was interrupted by the strikes, but of the 139 students who had left 122 rejoined. The results of the examinations for the Civil Engineering Diploma, the Mechanical Engineering Diploma and Mechanical Engineering Associationship were extremely good. The number of students trained at the University for the Diploma in Teaching was 29. In the remaining 10 vernacular normal schools 718 students were trained and 1,475 were trained in elementary training classes. As regards secondary education, recognised vernacular schools rose in number from 1,172 to 1,178 and in enrolment from 1,37,248 to 1,44,853, and the standard of teaching is reported to be steadily improving. Anglo-vernacular schools, however, which had 58,874 pupils, only increased in number by 3 to 245 and are apparently deteriorating in efficiency. An interesting event of the year was the appointment of a part-time Physical Director and two whole-time Assistant Physical Inspectors for secondary schools, who have already done much to arouse enthusiasm for organised games. Manual training, including woodwork, canework and clay-modelling, formed part of the curriculum in 75 schools. Expenditure on secondary education for boys increased by Rs. 3,09,469 to Rs. 80,02,456; a considerable portion of the extra money was used for improving buildings. Primary education showed some development. Recognised vernacular primary schools rose in number from 4,838 to 4,966 and in enrolment from 28,280 to 30,321; and there were in addition 12 Anglo-vernacular primary schools as against 11, with an enrolment of 1,040 as against 899. Altogether there were 67,583 children in the upper primary vernacular standards and 3,47,323 in the lower, the corresponding figures for the previous year having been 62,600 and 3,32,157. Expenditure on primary schools for boys increased by Rs. 6,41,124 to Rs. 24,30,938. The relatively large number of pupils in the lower primary standards of course implies a good deal of educational wastage, but during the period under review the proportion of lower standard pupils began for the first time to decline. As regards female education there were, if account is taken of girls reading in boys' schools, 2,04,726 females under instruction during the year, a rise of 12,788.

The increase took place chiefly in primary schools. It is a curious fact that approximately 70 per cent. of the girls were under instruction in boys' schools. The appointment of lady teachers, the introduction of sewing, and the provision of hostels were responsible for an improvement in the general level of teaching. Expenditure on secondary schools for girls increased by Rs. 1,46,558 to Rs. 15.97,282, and on primary education by Rs. 31,278 to Rs. 2,53,251.

In the Central Provinces, the number of pupils under instruction in educational institutions during the year was 4,51,182,—an increase of 19,346. The recognized institutions, numbering 5,348, accounted for 4,40,565 pupils and the unrecognised, of which there were 249, for 10,617. Both recognised and unrecognised institutions increased in number and enrolment. The percentage of male pupils to the total male population was 5·66, the corresponding figure for females being 0·83. Expenditure on education increased from Rs. 1,14,61,089 to Rs. 1,15,21,391, 50 per cent. of which was met from provincial revenues. As regards the University, an important event was the opening of the new buildings for the College of Science at Nagpur, which are commodious and well equipped. The total number of students on the rolls of the 5 colleges of the University was 1,669 as against 1, 645 in the previous year. The strength of the University Training Corps was raised to 283. There was a substantial increase in enrolment at the College of Law, and the results of the degree examinations generally were fairly satisfactory. The number of women studying at the arts colleges was 32. In addition to the 2,234 books added to the Library during the year, a valuable collection of about 4,500 volumes was bequeathed by the late Sir G. M. Chitnavis. Secondary education showed considerable development during the year, the number of high schools and Anglo-vernacular middle schools increasing respectively from 53 to 57 and from 176 to 178. Enrolment in the former rose from 5,822 to 7,130 and in the latter from 26,854 to 26,966. Expenditure on secondary schools amounted to Rs. 19,01,313,—an increase of Rs. 1,43,861,—towards which Government contributed Rs. 8,75,864. Grants amounting to Rs. 1.08.566 were sanctioned for building purposes, and a sum of Rs. 77,871 was paid for works completed. Of the 1,255 teachers in secondary schools 760 were trained. Of the 5,258 boys who appeared for the high school entrance and scholarship examination, 61 per cent. were successful. As regards primary education, there

were 14 more recognised primary schools for boys, the total being 4,175, and enrolment increased by 10,532 to 2,94,524. As many as 4,910 of the 10,116 teachers in primary schools were however untrained, and the condition of these schools generally was reported to be unsatisfactory, owing to defective tuition and supervision, educational wastage, and financial stringency. The standard in municipal schools was generally higher than in district board schools, owing to the tendency of the abler teachers to migrate to the towns. Although compulsory primary education has been introduced in certain areas, the working of the Act in the Province can scarcely be said to have been effective. Female education showed considerable development during the year, the total number of pupils in recognised institutions, including girls in boys' schools, increasing from 49,175 to 53,479. Girls' schools numbered 429 as against 406. In primary schools there were 1,410 girls belonging to the aboriginal tribes under instruction. The number of girl students in arts and science colleges was 32. The increase in the number of female pupils was general throughout the Province and fair progress in instruction was reported, despite overcrowding and insufficiency of staff. In the towns co-education was not favoured, but in villages the antipathy to it seems to be disappearing. Training schools decreased in number from 11 to 10, but enrolment rose from 1,142 to 1,155, and expenditure from Rs. 3,36,445 to Rs. 3,41,293. Of the 537 candidates who appeared for the primary trained teachers' certificate examination, 92·2 per cent. were successful, and the corresponding figure for the vernacular middle teachers' examination,—for which 183 students appeared,—was 95·6 per cent.

In the Madras Presidency a number of notable events in the educational world, particularly in connection with the Universities, took place during the year. The newly constituted Annamalai University at Chidambaram completed its first year's working. A new Music College, called the "Raja Annamalai Music College" was added to it. Two amending Bills in connection with the Andhra University were passed by the Legislative Council. One authorised Government to contribute a non-recurring grant of Rs. 27 lakhs for an endowment fund, in addition to a recurring grant of Rs. 7½ lakhs for buildings and equipment, and a recurring block grant of Rs. 1½ lakhs. The other made it obligatory on the University to conduct examinations for a period of five years for

the colleges at Anantapur and Madanapalle. Another notable event was the passing of the Madras University Act, 1929, as a result of which the Council of Affiliated Colleges and the Library Committee were abolished and the powers of the Syndicate extended. On the new Academic Council, headmasters of secondary schools have been given representation. Provision was made under the Act for the establishment of a Publication Bureau, University Extension Boards, and University Athletic Clubs. Another item which requires mention was the decision reached by Government as a result of the report of the General Inspection Commission that it is undesirable at present to establish any new Universities in the Presidency. The total number of first-grade colleges for men remained the same as before, but enrolment decreased from 10,995 to 10,639. Enrolment in second grade colleges fell from 1,949 to 1,799. Students in all arts colleges numbered 12,438 as against 12,944, and in professional colleges 2,048 as against 2,324. Expenditure on Universities declined from Rs. 34,91,047 to Rs. 8,05,726. The previous year's figure was however greatly inflated by the non-recurring grant of Rs. 27 lakhs made to the Annamalai University. Expenditure on arts colleges for men decreased by Rs. 10,841 to Rs. 26,65,871, while that on professional colleges increased by Rs. 28,565 to Rs. 11,38,057. There was a slight increase from Rs. 2,05,785 to Rs. 2,06,317 in expenditure on arts colleges for women, but expenditure on professional colleges for women declined from Rs. 45,471 to Rs. 38,589. As regards education in general, the total number of institutions rose by 994 to 56,957, and the enrolment by approximately 1,00,000 to 28,24,946, representing a percentage increase of 1·7 in schools and 3·5 in pupils. Privately-managed schools continued to decrease, and numbered 1,818 as against 2,078, with an enrolment of 54,841 as against 63,519. The percentage of pupils under tuition to the total population rose from 6·6 to 6·8,—representing 10·6 for boys and 3·1 for girls. Although the total expenditure on education declined from Rs. 545·75 to Rs. 541·07 lakhs, contributions to the total expenditure from public funds increased from 63 to 65 per cent. Secondary education during the year was distinguished by a decline in the number of schools but an increase in enrolment, the former falling from 528 to 526, and the latter rising from 1,69,844 to 1,75,493. Expenditure amounted to Rs. 81·54 lakhs as against Rs. 79·22 lakhs. There were 3,560 girls reading in secondary schools for boys as

against 3,113 in the previous year. Physical training and games have now been made compulsory in all secondary schools. As regards primary education, the number of schools for boys rose from 50,096 to 50,453, and enrolment from 21,93,845 to 22,57,377. There were 94,412 teachers, as against 91,762 in the previous year. Approximately half the schools were maintained by local boards. The total number of primary school buildings completed during the year was 852. The maintenance of large numbers of small schools necessarily involves considerable wastage, and during the year a departmental report was submitted to Government on the consolidation and concentration of elementary schools. The proposals made provide for the replacement of numerous small and inefficient schools, including separate schools for girls and Muhammadan and Depressed Class children, by large central schools. The scheme has been generally accepted by Government, and if brought into effect, should ensure much greater administrative and tuitional efficiency. Compulsory primary education was in force in 25 Municipalities and in certain rural areas during the year, but further extension proved impossible. The chief difficulty in the Presidency is the prejudice against the admission of Depressed Class children. Provision was made during the year for opening 107 new primary schools for Muhammadan boys at an annual recurring cost of Rs. 30,276. In addition to the total of primary schools already enumerated, there were 1,286 more maintained by village *panchayats*, with an enrolment of 44,887, of whom 4,767 were girls and 4,112 Depressed Class children. Students undergoing training in the 61 Government training schools during the year amounted to 8,874 as against 8,737. A revised curriculum for elementary school teachers, providing for a wider educational outlook and an appreciation of the needs of rural areas was approved. Turning now to female education, the number of schools for Indian girls rose from 4,938 to 5,509, and their enrolment from 3,15,701 to 3,40,942. A further 3,26,390 girls were under instruction in other educational institutions. Students attending the 5 arts colleges for women increased from 376 to 404, and a further 139 girls, as against 112 in the previous year, were reading in arts colleges for men. In the Government medical colleges there were 64 girl students. A total of 18,837 girls were under instruction in secondary schools as against 17,267 in the previous year. Primary schools for girls rose

from 4,722 to 5,298, and their enrolment from 2,94,678 to 3,18,791. A further 3,28,043 girls were reading in primary schools for boys. The number of teachers in primary girls schools increased from 12,001 to 13,272, of whom 9,781 were trained.

In the North-West Frontier Province educational institutions numbered 1,087, representing a decrease of 64. The fall was accounted for partly by the decline, from 238 to 157, in the number of unrecognised institutions. Recognised institutions rose by 27 to 940. The number of pupils under instruction increased from 82,152 to 84,123. The percentage of male pupils under instruction to the total male population was 6·0 as against 5·9, the corresponding figure for females being ·9 as against ·8. The cost of education fell from Rs. 26,19,988 to Rs. 25,19,921, owing to a decline in direct expenditure. The Government contribution amounted to Rs. 17,64,281,—an increase of Rs. 30,587. Collegiate education continued to develop, enrolment in the three aided colleges increasing by 20. For the first time in the history of the Province, one of the colleges presented candidates for the M.A. Degree. The attention devoted in the colleges to physical culture is yielding excellent results. The maintenance grant received by the Islamia College was raised by Rs. 20,000 to Rs. 1 lakh, and it also received a building grant of Rs. 72,500. A building grant of Rs. 25,000 was also received by the Vedic Bharatri College. Secondary education, too, continued to expand. The total number of secondary schools was 205,—164 being vernacular, as against 144 in the previous year. Anglo-vernacular schools numbered 41, and high schools 28. The number of pupils in high schools and Anglo-vernacular middle schools rose from 14,143 to 14,636, and in vernacular middle schools from 20,355 to 21,762. Schools of the latter type, which offer the readiest means of acquiring permanent literacy, are proving the most successful in the Province, and every effort is being made to increase their numbers. Total direct expenditure on secondary schools increased from Rs. 6,56,541 to Rs. 6,81,396. Physical training was given in all secondary schools and in most primary schools also. Primary schools decreased in number during the year from 621 to 619, but enrolment rose from 33,556 to 34,194, and expenditure from Rs. 3,56,837 to Rs. 3,687,818, of which 78 per cent. was contributed by Government. There were 322 girls under tuition in primary schools. Fewer new schools were opened during the year, but there was considerable development in Agency tracts, 6 new schools being opened

there. The percentage of trained teachers increased from 53·6 to 56·4. The introduction of compulsory primary education does not appear possible in the Province under present conditions. Female education continued to progress, though the Province is of course relatively backward in this respect, and there is only one high school for girls in the Province. There was however an increase from 120 to 133 in the total number of institutions for girls, and from 9,020 to 9,872 in enrolment. Expenditure on female education rose from Rs. 1,74,804 to Rs. 2,01,283.

In the Punjab, the total number of educational institutions increased during the year by 1,369 to 19,469, and enrolment by 92,607 to 13,13,376. Unrecognised institutions numbered 6,162,—a rise of 880. The percentage of male pupils under instruction to the total male population was 9·41 as against 10·1, the corresponding percentage for females rising from 1·67 to 1·81. Expenditure on education amounted to Rs. 3,14,73,203,—an increase of Rs. 6,91,368,—the contribution from Government funds being 56·69 per cent. of the total as against 55·95 per cent. in the preceding year. In the Punjab University, a Professor of History was added to the staff during the year, and the Syndicate decided to permit the opening of more degree colleges in *mofussil* towns; a new intermediate college was opened at Shahpur, bringing the number of such colleges to 13. The total number of colleges for men thus amounted to 41, and there were 3 for women. Enrolment in arts colleges increased from 10,655 to 11,813, of whom 161 were women. The results of the intermediate and degree examinations during the year were poor, the percentage of passes being as low as 41 and 44 respectively. This appears to have been due to the tendency of colleges to admit students who are incapable of benefiting by higher education. The matriculation examinations, too, were disappointing, the percentage of passes being well below the average at 55·12, despite the fact that the standard is not exacting and that increased facilities in the way of more trained teachers, improved curricula and so forth, are now available. As only about 40 per cent. of the matriculates continue to study at the University, there is great educational wastage. As regards secondary education, there was an increase in the number of secondary schools for boys from 3,356 to 3,647, and in enrolment from 5,71,775 to 6,20,725. Middle schools have been increasing rapidly, their number 8 years ago having been 656 as against a present total of 3,101. In view of the financial stringency, however, the local Government

decided that for the time being efforts should be made to improve the existing schools rather than to establish new ones. The strength of the teaching staff in secondary schools was 22,332, of which 80 per cent. were trained. Expenditure on secondary education for boys rose by Rs. 7,52,379 to Rs. 1,27,27,277,—50 per cent. of which was met from provincial revenues. Building grants aggregating Rs. 45,000 were paid to local bodies for school buildings, in addition to a grant of Rs. 5,00,000 to District Boards. The policy of adapting secondary education more closely to rural conditions was continued, and many middle schools now have farms or gardens attached to them. A good deal of attention is also devoted in schools of every type in the Punjab to physical training. Primary education also made progress, the number of primary schools for boys increasing by 64 to 5,580 and their enrolment by 11,235 to 3,74,525. The fact should however be explained that there were more pupils at the primary stage receiving instruction in the secondary schools than in the separate primary schools. Indeed, as many as 68·5 per cent. of the boys in secondary schools were at the primary stage, their number during the year being 4,24,988, as against the total enrolment of 3,74,525 in the primary schools themselves. The process of eliminating inefficient single-teacher schools continued, and their number declined from 1,642 to 1,380. Expenditure on primary schools increased slightly to a total of Rs. 36,55,674, of which 67·3 per cent. was derived from provincial revenues. Compulsory primary education by the end of the year had been introduced in 61 urban and 2,449 rural school areas. About 63 per cent. of the primary school teachers were trained, but the lack of trained women teachers continued to be a handicap. Female education however developed remarkably during the year, the number of girls' schools increasing by 472 to 4,590 and their enrolment by 19,047 to 1,68,740. There were 1,147 more girls in high schools than during the previous year. In spite of the difficulties in the way of co-education, 16,058 girls were reading in boys' schools and 5,746 boys were reading in girls' schools. Both the degree colleges for women were full, and the percentages of passes in the degree and intermediate examinations were respectively 68 and 71. Expenditure on female education increased by nearly Rs. 3 lakhs to about Rs. 24 lakhs.

There was an all-round improvement in educational activity in the United Province during the year. The number of recognised institutions increased by 106 to 23,881, and of unrecognised by 219

to 2,303. Enrolment in recognised schools for males and females increased respectively by 24,866 and 8,237, and although there were 2,838 fewer pupils in unrecognized schools, the total number of pupils in all classes of institutions increased by 30,265 to 15,21,748. The percentage of male scholars to the total male population increased from 5·7 to 5·8, the corresponding increase for females being from ·65 to ·69. Expenditure rose from Rs. 3,75,93,161 to Rs. 3,76,82,420, but this was considerably less than in previous years. Approximately 57·30 per cent. of the expenditure was derived from provincial revenues. As regards University and Collegiate education, there was a slight increase of 86 in the total enrolment in the five Universities in the Province. At Allahabad University the number of students increased by 216 to 1,659, but it was decided during the year, owing to financial stringency, to limit enrolment in future to 1,700. New lecturerships were created in the English, Physics, and Commerce Departments, and new junior lecturerships in the English, Arabic and Persian, Urdu, Hindi and Mathematics Departments. The Indian Science Congress and the Indian Economic Association both held their annual sessions at Allahabad during the year. Steps were taken to acquire a site for a new women's college. In the Lucknow University enrolment increased by 42 to 1,662. Besides the new chemistry block which was completed and equipped at a cost of Rs. 3½ lakhs, a separate block for zoology was nearing completion at the end of the year, and a new hostel to accommodate 100 students was under construction. A separate pharmacological laboratory was also built and equipped. The University set aside Rs. 50,000 for the development of its Library, which now contains 39,000 books. In Agra University progress was maintained and enrolment rose by 133 to 2,506. A useful donation of Rs. 50,000 for building purposes was received from the Revd. Canon A. W. Davies. Progress at Aligarh and Benares Universities has already been described in detail in Chapter VII. The total expenditure on University education increased during the year from Rs. 2,10,578 to Rs. 41,28,309, of which 63·34 per cent. was derived from provincial revenues. As regards secondary education, the number of schools rose from 944 to 963, their enrolment from 1,58,709 to 1,67,944, and expenditure on them from Rs. 78,98,352 to Rs. 83,23,227, of which 53·1 per cent. came from provincial funds. One more intermediate college was opened during the year, and the

number of such institutions, including 7 intermediate classes attached to degree colleges, is now 30. One Government college and one intermediate college were recognised for the Diploma in Agriculture. There was an increase of 9 in the number of high and middle Anglo-vernacular schools, bringing the total to 258, and enrolment increased by 4,256 to 82,492. The demand for more middle vernacular schools continued to grow, their number increasing by 9 to 675, and their enrolment by 4,872 to 80,969. The introduction of English as an optional subject in these schools, together with the adoption of vernacular as the medium of instruction in English schools, is tending to destroy the distinction between these institutions. An officer was placed on special duty during the year to prepare a scheme for giving more rural bias to the curriculum of vernacular middle schools. The number of primary schools for boys increased during the year by 55, bringing the total number of such institutions to 20,068. Enrolment increased by 15,171 to 11,55,142, —this including 48,093 girls reading in boys' schools. Expenditure rose by Rs. 1,53,589 to Rs. 85,69,399, towards which Government funds contributed nearly 71 per cent. By the end of the year 36 out of the 85 Municipalities and 25 out of the 48 District Boards in the Province had introduced or partly introduced compulsory primary education. The financial commitment of Government in this cause is heavy, and now amounts to a sum of Rs. 4,01,650 recurring. The provincial Council continued to take a keen interest in education, particularly primary and female education. There was an increase of 6 in the number of training institutions in the Province and 78 in their enrolment; they include training colleges at Allahabad, Benares, Agra, Lucknow, and Aligarh. The percentage of trained teachers in high schools, middle English schools, and vernacular schools was 7, 32 and 94 respectively. In the Training Department of the Isabella Thobourn College for girls, all the 9 candidates who appeared for the B. T. degree passed. The number of recognised institutions for the education of girls in the Province rose by 43 to 1,986, but unrecognised institutions declined by 48 to 169, thus reducing the total by 5. Enrolment however increased by 7,336 to 97,380. There were 5 colleges, 13 high schools, 37 middle English schools, 166 middle vernacular schools, and 1,711 primary schools for girls in the Province. Expenditure on female education increased by Rs. 1,16,074 to Rs. 17,71,957, of which about 50 per cent. was derived from provincial revenues.

APPENDIX I.

Representative List of Official Reports, etc.

(Mostly annual.)

General.

Statistical Abstract for British India.

Census Report (decennial).

Administration Reports: Madras, Bombay, United Provinces, Punjab, Bengal, Central Provinces and Berar, Burma, Bihar and Orissa, Assam, North-West Frontier Province, Delhi, Coorg, Andaman and Nicobar Islands, Civil and Military Station of Bangalore, Ajmer-Merwara, Baluchistan Agency.

Agriculture and Veterinary.

Agriculture and Livestock in India (fortnightly).

The Indian Journal of Agricultural Science (fortnightly).

The Indian Journal of Veterinary Science and Animal Husbandry (quarterly).

Scientific Monographs of the Imperial Council of Agricultural Research.

Review of Agricultural Operations in India.

Proceedings of the Board of Agriculture in India.

Catalogue of Indian Insects.

Scientific Reports of the Imperial Institute of Agricultural Research, Pusa.

Report of the Department of Agriculture for each Province.

Season and Crop Report for each Province.

Agricultural Statistics of India.

Area and Yield of Principal Crops in India.

Report of the Civil Veterinary Department for each Province.

Report of the Imperial Institute of Veterinary Research, Muktesar.

The Annual Report of the Imperial Council of Agricultural Research.

Co-operative Societies.

Statistical Statements relating to Co-operative Movement in India.

Report on Co-operative Societies for each Province.

Reports of Conferences of Registrars of Co-operative Societies.

Education.

Annual Reports on Education for India and for each Province.

Quinquennial Reviews on the progress of education in India and in each Province.

Occasional Reports and Pamphlets on education.

Emigration and Immigration.

Annual report on the working of the Indian Emigration Act of 1922 and the Rules framed thereunder in the Presidency of Bengal.

Annual Report on the working of the Indian Emigration Act in the Bombay Presidency.

Annual Report on the working of the Indian Emigration Act and the rules framed thereunder in the Madras Presidency.

Annual Report of the Agent of the Government of India in South Africa.

Annual Report of the Agent of the Government of India in British Malaya.

Annual Report of the Agent of the Government of India in Ceylon on the working of the Indian Emigration Act, the Rules issued thereunder and of the Labour Ordinances of Ceylon.

Reports on Immigrants Labour in the Province of Assam.

Annual Report on Emigration to the Labour Districts of Assam, Cachar and Sylhet.

Finance.

Budget of the Government of India.

Finance and Revenue Accounts of the Government of India.

East India Accounts and Estimates: Explanatory Memorandum by the Secretary of State for India (Parliamentary Paper).

Home Accounts of the Government of India (Parliamentary Paper).

East India (Loans raised in England) (Half-yearly Parliamentary Paper).

Reports on the Administration of the Mints at Calcutta and Bombay, with a review of the Controller of the Currency.

Report of the Controller of the Currency.

Forests.

Annual Return of Statistics relating to Forest Administration in British India.

Report on Forest Administration for each Province.

Reports of the Forest Research Institute and the Imperial Forest College, Dehra Dun.

Quinquennial Forest Review.

Indian Forest Memoirs.

Indian Forest Records.

Forest Bulletins.

Justice and Police.

Report on the Administration of Civil Justice for each Province.

Report on the Administration of Criminal Justice for each Province.

Report on Jails for each Province.

Report on Police for each Province, and for Bombay Town and Island, Calcutta and Rangoon.

Land Revenue, etc.

Land Revenue Administration: Provincial Reports for Bengal, Bihar and Orissa, Assam, United Provinces, Bombay Presidency (including Sind), Punjab, Central Provinces and Berar, Burma, and Madras.

Report on Land Revenue Administration, Land Records, Settlement Operations, Alienation of Land Act, etc., for North-West Frontier Province.

Madras Survey, Settlement and Land Records Department Report.

Reports of Land Records Departments for Bombay, Burma, Bengal, United Provinces, and Punjab.

Report on Settlement Operations, Punjab.

Reports on Survey and Settlement Operations, Bengal, Bihar and Orissa, and Assam.

Reports on Operations of the Land Records and Settlement Departments, Central Provinces and Berar.

Report of the Talukdari Settlement Officer, Bombay.

Provincial Reports on the Administration of Estates under the Court of Wards.

Report on the Punjab Canal Colonies.

Legislation.

Acts of the Indian Legislature and Provincial Legislative Councils.

Regulations made by the Governor-General in Council.

Ordinances made by the Governor-General.

Official Accounts of the Debates and Proceedings in the Central and Provincial Legislatures.

Local Self-Government.

Report on Municipalities for each Province and for Calcutta, Bombay City, Madras City and Rangoon.

Reports on District and Local Boards for each Province.

Reports of Ports Trusts of Calcutta, Bombay, Madras, Rangoon, Karachi and Aden.

Administration Report of the Chittagong Port Commissioners.

Medical, Public Health, and Vital Statistics.

Report of the Public Health Commissioner with the Government of India.

Report of the Director of Public Health for each Province.

Report on Civil Hospitals and Dispensaries for each Province.

Report on Mental Hospitals for each Province.

Report of the Chemical Examiner and Bacteriologist for each Province.

Indian Journal of Medical Research (quarterly).

Indian Medical Research Memoirs (supplementary to the Indian Journal of Medical Research), issued periodically.

Records of the Malaria Survey of India issued by the Director, Malaria Survey of India.

Reports of the Scientific Advisory Board and the Governing Body, I. R. F. A.

Report of each of the Pasteur Institutes at Kasauli, Coonoor, Rangoon and Shillong.

Report of the Central Research Institute, Kasauli.

Report of the Haffkine Institute, Bombay.

Report of the King Institute, Guindy.

Report of the Calcutta School of Tropical Medicine and Hygiene.

Reports of the various Medical Colleges and Schools in India.

Mineral Production and Inspection of Mines.

Review of Mineral Production (in Record of Geological Survey).

Report on Production and Consumption of Coal in India.

Report of the Chief Inspector of Mines.

Posts and Telegraphs.

Report on the Posts and Telegraphs of India.

Prices and Wages.

Prices and Wages in India (tables).
Variations in Indian Price Levels (tables).
Reports of Provincial Wage Censuses.

Public Works.

Report by the Railway Board on Indian Railways.
History of Indian Railways constructed and in progress.
Quarterly Summaries of proceedings of Railway Local Advisory Committees.
Half-yearly Summaries of reports on Railway accidents by Government Inspectors of Railways.
Reports on Public Works (Buildings and Roads) for Madras, Bombay, United Provinces, Punjab, Bihar and Orissa, Central Provinces, Assam, and North-West Frontier Province.
Review of Irrigation in India.
Administration Reports on Irrigation for each Province (except Assam).
Indian Roads.

Revenue (other than Land Revenue).

Salt Department Reports: Northern India, Madras, Bombay, Sind, Bengal, Burma, Bihar and Orissa.
Excise Report for each Province.
Report on the Operations of the Opium Department.
Stamp Department Report for each Province.
Registration Department Report for each Province.
All-India Income-Tax Report and Returns.

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APPENDIX II.

Prime Minister's Declaration at Round Table Conference on 19th January 1931.

The view of His Majesty's Government is that responsibility for the Government of India should be placed upon Legislatures, Central and Provincial, with such provisions as may be necessary to guarantee, during a period of transition the observance of certain obligations and to meet other special circumstances, and also with such guarantees as are required by minorities to protect their political liberties and rights.

In such statutory safeguards as may be made for meeting the needs of the transitional period, it will be a primary concern of His Majesty's Government to see that the reserved powers are so framed and exercised as not to prejudice the advance of India through the new constitution to full responsibility for her own government.

His Majesty's Government, whilst making this declaration, is aware that some of the conditions which are essential to the working of such a constitution as is contemplated, have not been finally settled, but it believes that as the result of the work done here, they have been brought to a point which encourages the hope that further negotiations, after this declaration, will be successful.

His Majesty's Government has taken note of the fact that the deliberations of the Conference have proceeded on the basis, accepted by all parties, that the Central Government should be a Federation of all-India, embracing both the Indian States and British India in a bi-cameral legislature. The precise form and structure of the new Federal Government must be determined after further discussion with the Princes and representatives of British India. The range of subjects to be committed to it will also require further discussion, because the Federal Government will have authority only in such matters concerning the States as will be ceded by their Rulers in agreements made by them on entering into Federation. The connection of the States with the Federation will remain subject to the basic principle that in regard to all matters not ceded by them to the Federation their relations will be with the Crown acting through the agency of the Viceroy.

With a Legislature constituted on a federal basis, His Majesty's Government will be prepared to recognise the principle of the responsibility of the Executive to the Legislature.

Under existing conditions the subjects of Defence and External Affairs will be reserved to the Governor-General, and arrangements will be made to place in his hands the powers necessary for the administration of those subjects. Moreover, as the Governor-General must, as a last resort, be able in an emergency to maintain the tranquillity of the State, and must similarly be responsible for the observance of the constitutional rights of Minorities, he must be granted the necessary powers for these purposes.

As regards finance, the transfer of financial responsibility must necessarily be subject to such conditions as will ensure the fulfilment of the obligations incurred under the authority of the Secretary of State and the maintenance unimpaired of the financial stability and credit of India. The Report of the Federal Structure sub-Committee indicates some ways of dealing with this subject including a Reserve Bank, the service of loans, and Exchange policy, which, in the view of His Majesty's Government will have to be provided for somehow in the new constitution. It is of vital interest to all parties in India to accept these provisions to maintain financial confidence. Subject to these provisions the Indian Government would have full financial responsibility for the methods of raising revenue and for the control of expenditure on non-reserved services.

This will mean that under existing conditions the Central Legislature and Executive will have some features of dualism which will have to be fitted into the constitutional structure.

The provision of reserved powers is necessary in the circumstances and some such reservation has indeed been incidental to the development of most free constitutions. But every care must be taken to prevent conditions arising which will necessitate their use. It is, for instance, undesirable that Ministers should trust to the special powers of the Governor-General as a means of avoiding responsibilities which are properly their own, thus defeating the development of responsible Government by bringing into use powers meant to lie in reserve and in the back-ground. Let there be no mistake about that.

The Governors' Provinces will be constituted on a basis of full responsibility. Their Ministries will be taken from the Legislature and will be jointly responsible to it. The range of Provincial subjects will be so defined as to give them the greatest possible measure of self-government. The authority of the Federal Government will be limited to provisions required to secure its administration of Federal subjects, and so discharge its responsibility for subjects defined in the constitution as of all-India concern.

There will be reserved to the Governor only that minimum of special powers which is required in order to secure, in exceptional circumstances, the preservation of tranquillity, and to guarantee the maintenance of rights provided by Statute for the Public Services and minorities.

Finally, His Majesty's Government considers that the institution in the Provinces of responsible government requires both that the Legislatures should be enlarged, and that they should be based on a more liberal franchise.

In framing the Constitution His Majesty's Government considers that it will be its duty to insert provisions guaranteeing to the various minorities, in addition to political representation, that differences of religion, race, sect or caste, shall not themselves constitute civic disabilities.

In the opinion of His Majesty's Government it is the duty of the communities to come to an agreement amongst themselves on the points raised by the Minorities sub-Committee but not settled there. During the continuing negotiations such an agreement ought to be reached and the Govern-

ment will continue to render what good offices it can to help to secure that end, as it is anxious not only that no delay should take place in putting the new Constitution into operation, but that it should start with the goodwill and confidence of all the communities concerned.

The various sub-Committees which have been studying the more important principles of a Constitution which would meet Indian conditions have surveyed a considerable part of the structure in detail and the still unsettled points have been advanced a good way to an agreement. His Majesty's Government, however, in view of the character of the Conference and of the limited time at its disposal in London, has deemed it advisable to suspend its work at this point, so that Indian opinion may be consulted upon the work done, and expedients considered for overcoming the difficulties which have been raised. His Majesty's Government will consider, without delay, a plan by which our co-operation may be continued so that the results of our completed work may be seen in a new Indian Constitution. If, in the meantime, there is a response to the Viceroy's appeal to those engaged at present in civil disobedience, and others wish to co-operate on the general lines of this declaration, steps will be taken to enlist their services.

I must convey to you all on behalf of the Government its hearty appreciation of the services you have rendered not only to India but to this country, by coming here and engaging in these personal negotiations. Personal contact is the best way of removing those unfortunate differences and misunderstandings which too many people on both sides have been engendering between us in recent years. A mutual understanding of intention and difficulty, gained under such conditions as have prevailed here, is by far the best way for discovering ways and means of settling differences and satisfying claims. His Majesty's Government will strive to secure such an amount of agreement as will enable the new Constitution to be passed through the British Parliament and to be put into operation with the active goodwill of the people of both countries.

APPENDIX III.

Text of Settlement published on 5th March 1931.

The following statement by the Governor-General in Council is published for general information:—

1. Consequent on the conversations that have taken place between His Excellency the Viceroy and Mr. Gandhi, it has been arranged that the civil disobedience movement be discontinued, and that, with the approval of His Majesty's Government, certain action be taken by the Government of India and local Governments.

2. As regards constitutional questions, the scope of future discussion is stated, with the assent of His Majesty's Government, to be with the object of considering further the scheme for the constitutional Government of India discussed at the Round Table Conference. Of the scheme there outlined, Federation is an essential part; so also are Indian responsibility and reservations or safeguards in the interests of India, for such matters as, for instance, defence; external affairs; the position of minorities; the financial credit of India, and the discharge of obligations.

3. In pursuance of the statement made by the Prime Minister in his announcement of the 19th of January 1931, steps will be taken for the participation of the representatives of the Congress in the further discussions that are to take place on the scheme of constitutional reform.

4. The settlement relates to activities directly connected with the civil disobedience movement.

5. Civil disobedience will be effectively discontinued and reciprocal action will be taken by Government. The effective discontinuance of the civil disobedience movement means the effective discontinuance of all activities in furtherance thereof, by whatever methods pursued and, in particular, the following:—

(1) The organised defiance of the provisions of any law.

(2) The movement for the non-payment of land revenue and other legal dues.

(3) The publication of news-sheets in support of the civil disobedience movement.

(4) Attempts to influence civil and military servants or village officials against Government or to persuade them to resign their posts.

6. As regards the boycott of foreign goods, there are two issues involved, firstly, the character of the boycott and secondly, the methods employed in giving effect to it. The position of Government is as follows. They approve of the encouragement of Indian industries as part of the economic and industrial movement designed to improve the material condition of India, and they have no desire to discourage methods of propaganda, persuasion or advertisement pursued with this object in view, which do not interfere with the freedom of action of individuals, or are not prejudicial to the mainte-

nance of law and order. But the boycott of non-Indian goods (except of cloth which has been applied to all foreign cloth) has been directed during the civil disobedience movement chiefly, if not exclusively, against British goods, and in regard to these it has been admittedly employed in order to exert pressure for political ends.

It is accepted that a boycott of this character, and organised for this purpose, will not be consistent with the participation of representatives of the Congress in a frank and friendly discussion of constitutional questions between representatives of British India, of the Indian States, and of His Majesty's Government and political parties in England, which the settlement is intended to secure. It is, therefore, agreed that the discontinuance of the civil disobedience movement connotes the definite discontinuance of the employment of the boycott of British commodities as a political weapon and that, in consequence, those who have given up, during a time of political excitement, the sale or purchase of British goods must be left free without any form of restraint to change their attitude if they so desire.

7. In regard to the methods employed in furtherance of the replacement of non-Indian by Indian goods, or against the consumption of intoxicating liquor and drugs, resort will not be had to methods coming within the category of picketing, except within the limits permitted by the ordinary law. Such picketing shall be unaggressive and it shall not involve coercion, intimidation, restraint, hostile demonstration, obstruction to the public, or any offence under the ordinary law. If and when any of these methods is employed in any place, the practice of picketing in that place will be suspended.

8. Mr. Gandhi has drawn the attention of Government to specific allegations against the conduct of the police, and represented the desirability of a public enquiry into them. In present circumstances Government see great difficulty in this course and feel that it must inevitably lead to charges and counter-charges, and so militate against the re-establishment of peace. Having regard to these considerations, Mr. Gandhi agreed not to press the matter.

9. The action that Government will take on the discontinuance of the civil disobedience movement is stated in the following paragraphs.

10. Ordinances promulgated in connection with the civil disobedience movement will be withdrawn.

Ordinance No. 1 of 1931 relating to the terrorist movement does not come within the scope of the provision.

11. Notifications declaring associations unlawful under the Criminal Law Amendment Act of 1908 will be withdrawn, provided that the notifications were made in connection with the civil disobedience movement.

The notifications recently issued by the Burma Government under the Criminal Law Amendment Act do not come within the scope of this provision.

12. (i) Pending prosecutions will be withdrawn if they have been filed in connection with the civil disobedience movement and relate to offences which do not involve violence other than technical violence, or incitement to such violence.

(*ii*) The same principles will apply to proceedings under the security provisions of the Criminal Procedure Code.

(*iii*) Where a local Government has moved any High Court or has initiated proceedings under the Legal Practitioners' Act in regard to the conduct and legal practitioners in connection with the civil disobedience movement, it will make application to the Court concerned for permission to withdraw such proceedings, provided that the alleged conduct of the persons concerned does not relate to violence or incitement to violence.

(*iv*) Prosecutions, if any, against soldiers and police involving disobedience of orders will not come within the scope of this provision.

13. (*i*) Those prisoners will be released who are undergoing imprisonment in connection with the civil disobedience movement for offences which did not involve violence, other than technical violence, or incitement to such violence.

(*ii*) If any prisoner who comes within the scope of (*i*) above has been also sentenced for a jail offence, not involving violence, other than technical violence, or incitement to such violence, the latter sentence also will be remitted, or if a prosecution relating to an offence of this character is pending against such a prisoner, it will be withdrawn.

(*iii*) Soldiers and police convicted of offences involving disobedience of orders—in the very few cases that have occurred—will not come within the scope of the amnesty.

14. Fines which have not been realised will be remitted. Where an order for the forfeiture of security has been made under the security provisions of the Criminal Procedure Code, and the security has not been realised, it will be similarly remitted.

Fines which have been realised and securities forfeited and realised under any law will not be returned.

15. Additional police imposed in connection with the civil disobedience movement at the expense of the inhabitants of a particular area will be withdrawn at the discretion of local Governments. Local Governments will not refund any money, not in excess of the actual cost, that has been realised, but they will remit any sum that has not been realised.

16. (*a*) Moveable property, which is not an illegal possession, and which has been seized in connection with the civil disobedience movement, under the Ordinances or the provisions of the Criminal Law, will be returned, if it is still in the possession of Government.

(*b*) Moveable property, forfeited or attached in connection with the realisation of land revenue or other dues, will be returned, unless the Collector of the District has reason to believe that the defaulter will contumaciously refuse to pay the dues recoverable from him within a reasonable period. In deciding what is a reasonable period, special regard will be paid to cases in which the defaulters, while willing to pay, genuinely require time for the purpose, and if necessary, the revenue will be suspended in accordance with the ordinary principles of land revenue administration.

(*c*) Compensation will not be given for deterioration.

(*d*) Where moveable property has been sold or otherwise finally disposed of by Government, compensation will not be given and the sale proceeds will not be returned, except in so far as they are in excess of the legal dues for which the property may have been sold.

(*e*) It will be open to any person to seek any legal remedy he may have on the ground that the attachment or seizure of property was not in accordance with the law.

17. (*a*) Immoveable property of which possession has been taken under Ordinance IX of 1930 will be returned in accordance with the provisions of the Ordinance.

(*b*) Land and other immoveable property in the possession of Government, which has been forfeited or attached in connection with the realisation of land revenue or other dues, will be returned unless the Collector of the district has reason to believe that the defaulter will contumaciously refuse to pay the dues recoverable from him within a reasonable period. In deciding what is a reasonable period special regard will be paid to cases in which the defaulter, while willing to pay, genuinely requires time for the purpose, and if necessary the revenues will be suspended in accordance with the ordinary principles of land revenue administration.

(*c*) Where immoveable property has been sold to third parties, the transaction must be regarded as final, so far as Government are concerned.

NOTE.—Mr. Gandhi has represented to Government that according to his information and belief some, at least, of these sales have been unlawful and unjust. Government on the information before them cannot accept this contention.

(*d*) It will be open to any person to seek any legal remedy he may have on the ground that the seizure or attachment of property was not in accordance with the law.

18. Government believe that there have been very few cases in which the realization of dues has not been made in accordance with the provisions of the law. In order to meet such cases, if any, local Governments will issue instructions to District Officers to have prompt enquiry made into any specific complaint of this nature, and to give redress without delay if illegality is established.

19. Where the posts rendered vacant by resignations have been permanently filled, Government will not be able to reinstate the late incumbents. Other cases of resignation will be considered on their merits by local Governments who will pursue a liberal policy in regard to the reappointment of Government servants and village officials who apply for reinstatement.

20. Government are unable to condone breaches of the existing law relating to the salt administration, nor are they able, in the present financial conditions of the country, to make substantial modifications in the Salt Acts.

For the sake, however, of giving relief to certain of the poorer classes, they are prepared to extend their administrative provisions, on lines already prevailing in certain places, in order to permit local residents in villages,

immediately adjoining areas where salt can be collected or made, to collect or make salt for domestic consumption or sale within such villages, but not for sale to, or trading with, individuals living outside them.

21. In the event of Congress failing to give full effect to the obligations of this settlement, Government will take such action as may, in consequence, become necessary for the protection of the public and individuals and the due observance of law and order.

H. W. EMERSON,
Secretary to the Government of India.

APPENDIX IV.

Note by an observer on the Civil Disobedience Movement in Bombay City.

As in other parts of India, the chief feature of the earlier stages of the Civil Disobedience Movement in Bombay was the illicit manufacture of salt. This was frequently done in ceremonial fashion by prominent members of the Congress on the Esplanade Maidan. The operation consisted of boiling sea water in a receptacle over a fire,—the performer with a few attendants being surrounded by concentric rings of Congress volunteers with tightly linked arms, the rings numbering not infrequently from six to twelve. On one occasion no less than thirty rings were used, three of which consisted of Sikhs and three of women. For the police to break through these rings of volunteers without inflicting injuries was an extremely prolonged and exasperating task, and when,—as was usually the case,—they had succeeded in doing so the crowd more often than not became violent and pelted them with stones.

Breaches of the Salt Law on a far more extensive scale were later organized at the Wadala Salt pans in the Northern part of the Island. Thousands of Congress supporters supplemented by sightseers streamed out of Bombay by tram, train and motor lorry, and advanced in masses on the three mile front covering the salt pans. It was impossible to supply sufficient police to protect this front from raiders trying to remove salt from the pans; moreover at the outset the police had orders to use only the absolute minimum of force. Subsequently to deal with the increasingly serious situation that was developing, the assistance of the military was obtained,—though the brunt of the work still fell on the police, who were gradually compelled to use more force. *Lathis* were freely employed, but even this did not prevent a considerable amount of salt being stolen. During the course of the Wadala raids the police had to be kept on duty all day without relief from early morning, in the burning sun, and most of their time was taken up in the strenuous task of chasing raiders away from the pans. The arrival of the monsoon put an end to this form of Congress activity, but attention was then diverted to picketing foreign cloth shops. At the start, picketers actively prevented customers from entering shops in the Fort area, and the police were called in to arrest and remove them; but no sooner had one batch been removed, when another took its place. Vast crowds of course collected to watch the proceedings, with the result that traffic became impossible, turmoil and confusion arose, and the police, in the end, were attacked. This phase of picketing in the Fort died down after a while, but was replaced by intensive picketing of cloth shops in the native city. While this was in progress, any merchant who wished to remove bales of foreign cloth from a warehouse could only do so at considerable personal risk; and on many occasions the police had to escort lorry loads of foreign cloth through the city. This was always

a troublesome matter, as Congress volunteers were in the habit of laying themselves prostrate in front of the lorry before it started, or else the tyres of the vehicle, if pneumatic, would be punctured, and frequently great difficulty was experienced in getting the convoy to its destination in a safer part of the city. On two or three occasions volunteers marked down the warehouse from which bales of cloth had been taken, and at the earliest opportunity broke into it and set fire to the goods that remained.

Throughout the whole of this time hardly a day passed without some meeting being held, a huge procession being led through the streets, a disturbance created outside one of the Magistrates' Courts while trials of volunteers were in progress, or lorry-loads of enthusiasts careering through the streets shouting Congress slogans. By these and other means excitement was maintained at fever heat by the Congress for two or three months, and the city was kept in a continual state of pandemonium. The police were the sole visible sign of Government authority in the city and as such were the targets for every kind of vituperation and ridicule.

It has been estimated by some well informed observers that from a very early stage of the proceedings about 20 per cent. of the population of the city were actually Congress workers or sympathizers, and 70 per cent. more were for one reason or another hostile to the police. Of the remainder, excluding most Government servants, the majority were content to look on and laugh. The position of the police, therefore, was extremely unenviable. Actually, neither the breaches of the Salt Law, nor the picketing of cloth shops, troublesome though they proved, were nearly so dangerous as the organized mass demonstrations. In the first few months, these demonstrations were of almost daily occurrence. Gigantic yelling processions passed through the main thoroughfares of the city; volunteers seized or attempted to seize the functions of the traffic duty constables; policemen were insulted and held up to ridicule in every possible way. At Congress House and at the Courts, there were innumerable instances in which it was only the steadiness of the sepoys in the front rank that prevented the most serious outbreak of disorder, which would probably have resulted in the police being overwhelmed. On one particular occasion a crowd of close on 50,000, yelling, angry, and out for mischief, was held up by a force of 200 unarmed police; the presence in the background of a small armed force was quite insufficient as a deterrent, and a sign of weakness on the part of any one of the unarmed constables would in all probability have turned Bombay into a Sholapur. The situation was saved because the mob hesitated to attack a disciplined, if minute, body of men, who showed no sign of fear. There is no doubt that these gigantic demonstrations were primarily intended to overawe the police, and when it was clear that they could not do so the most dangerous phase of the Movement was at an end.

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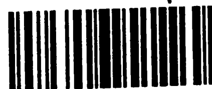
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